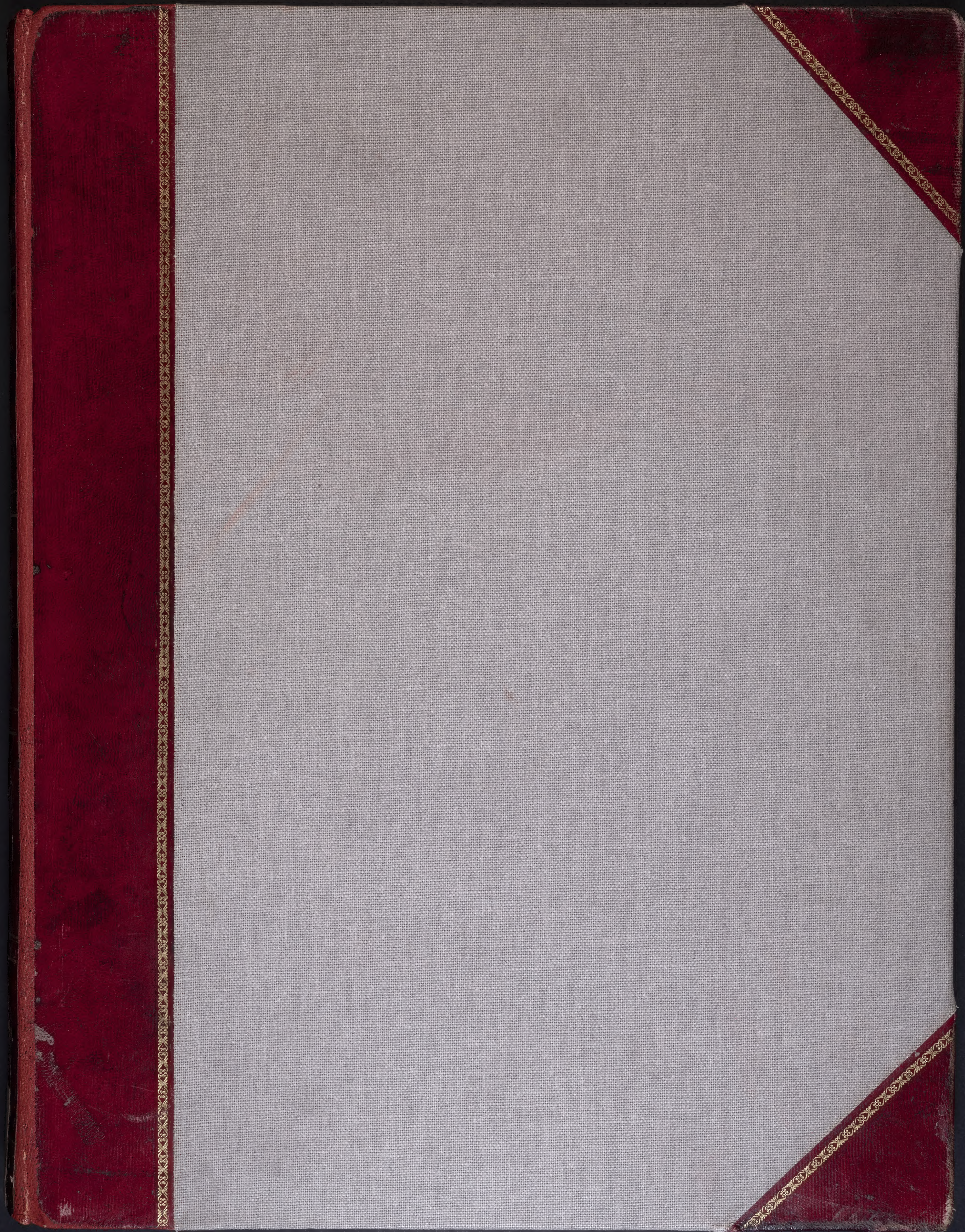




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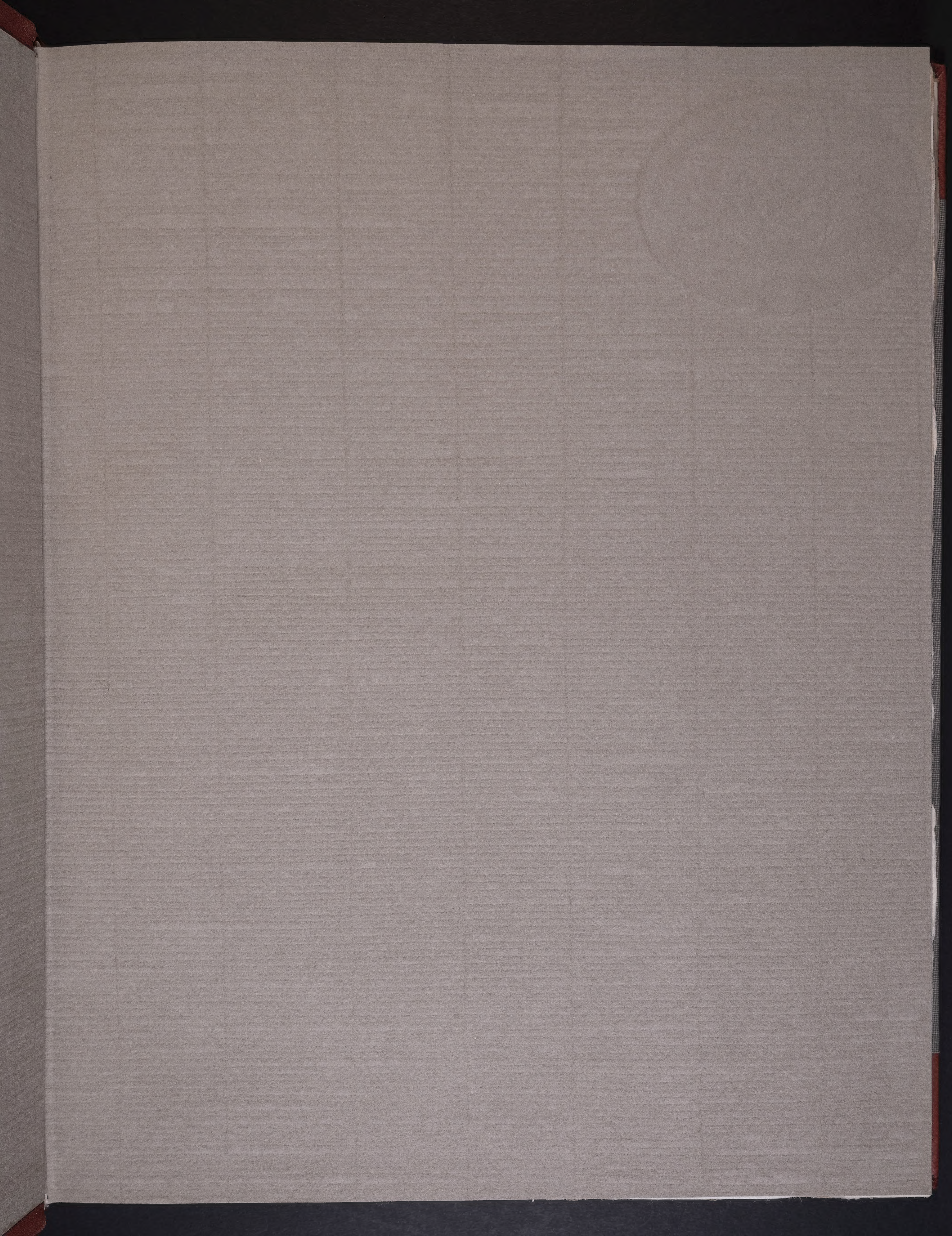
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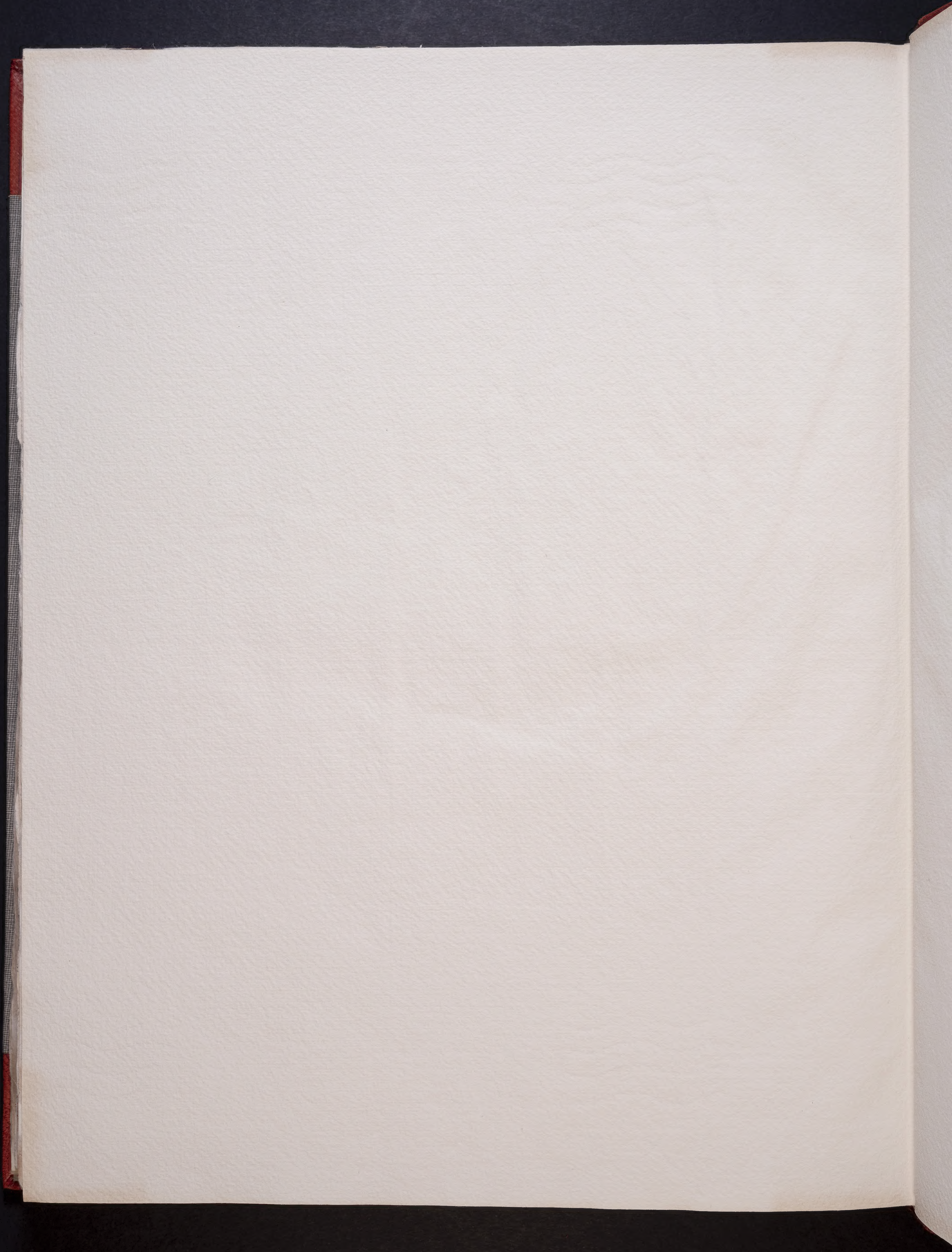
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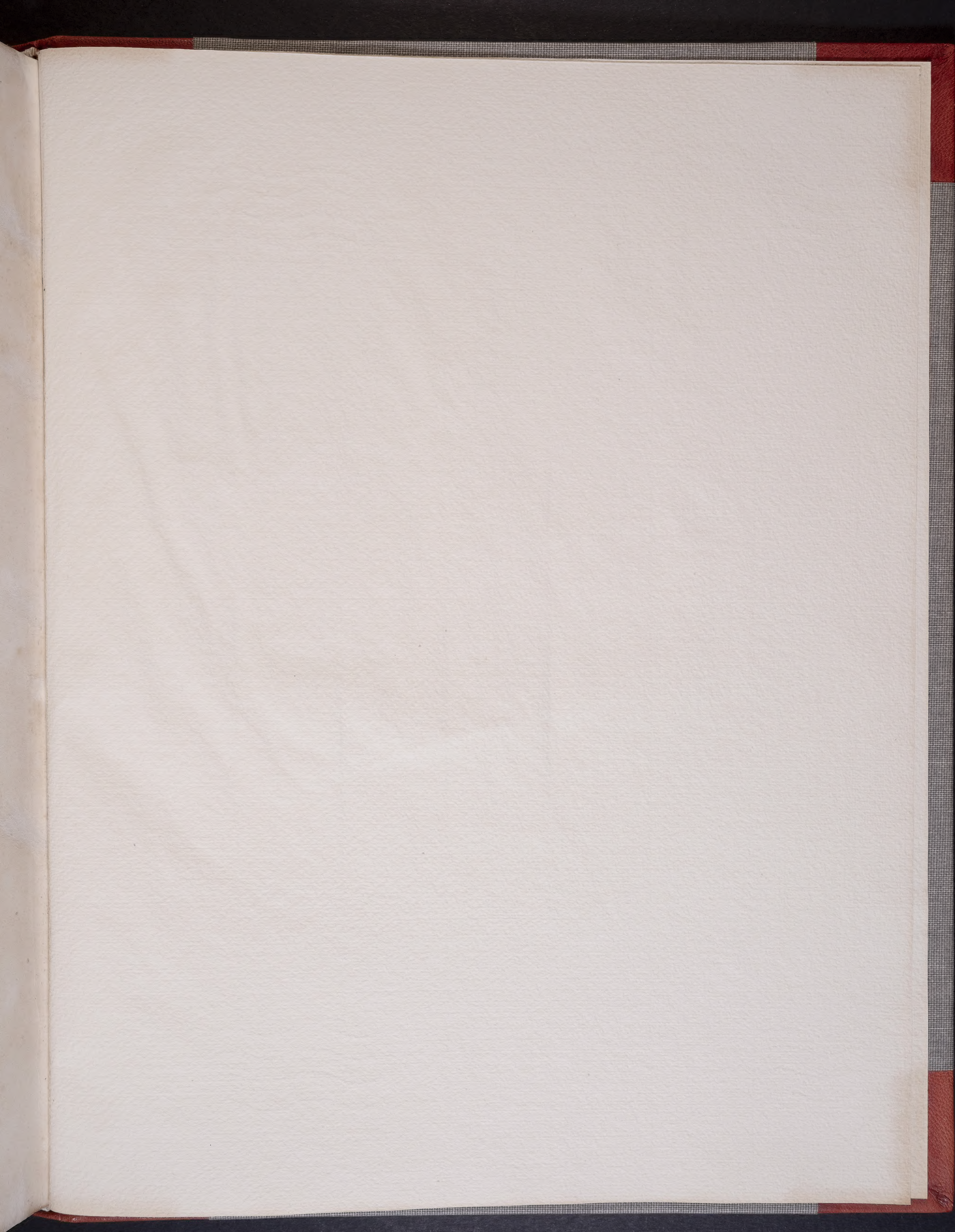
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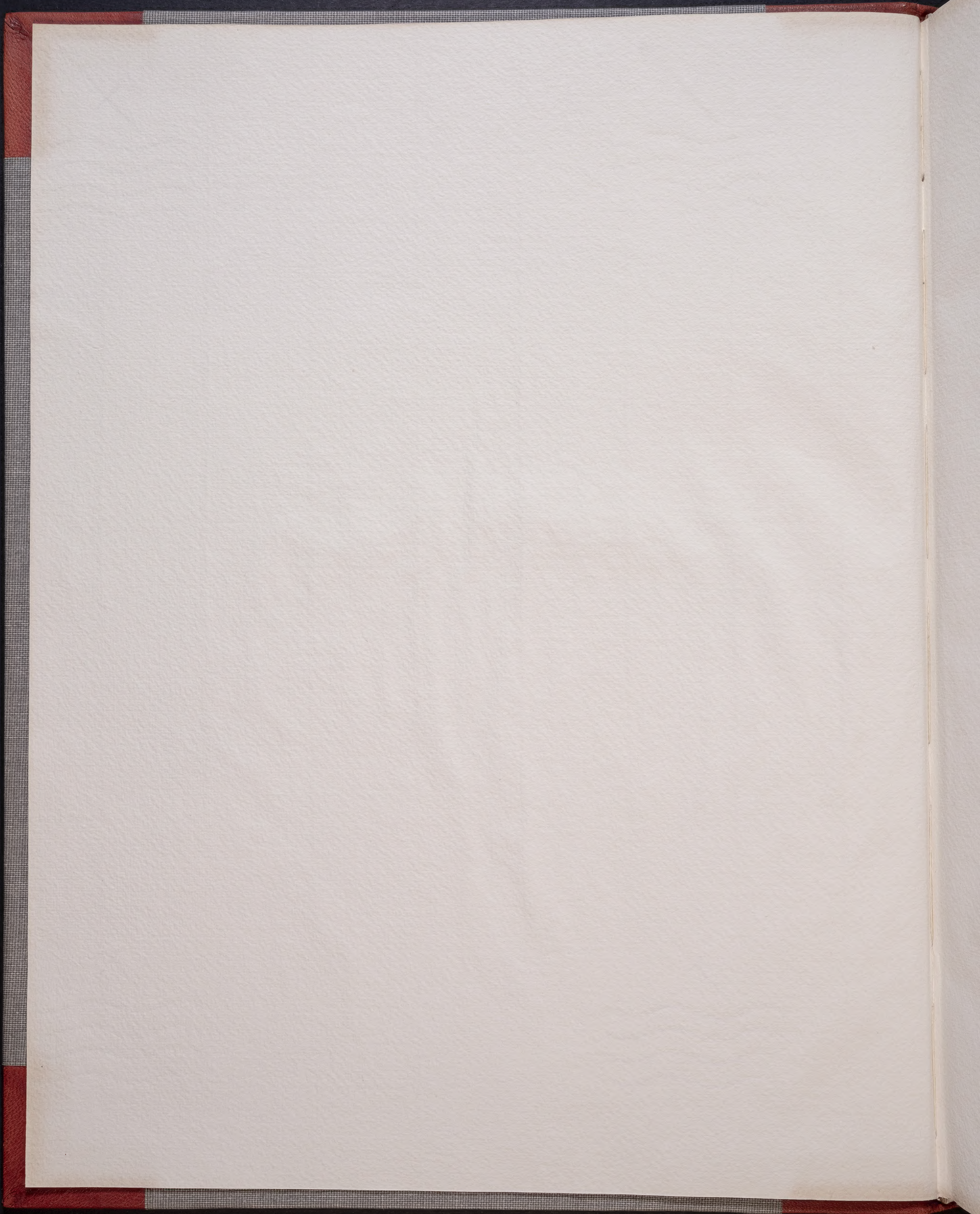




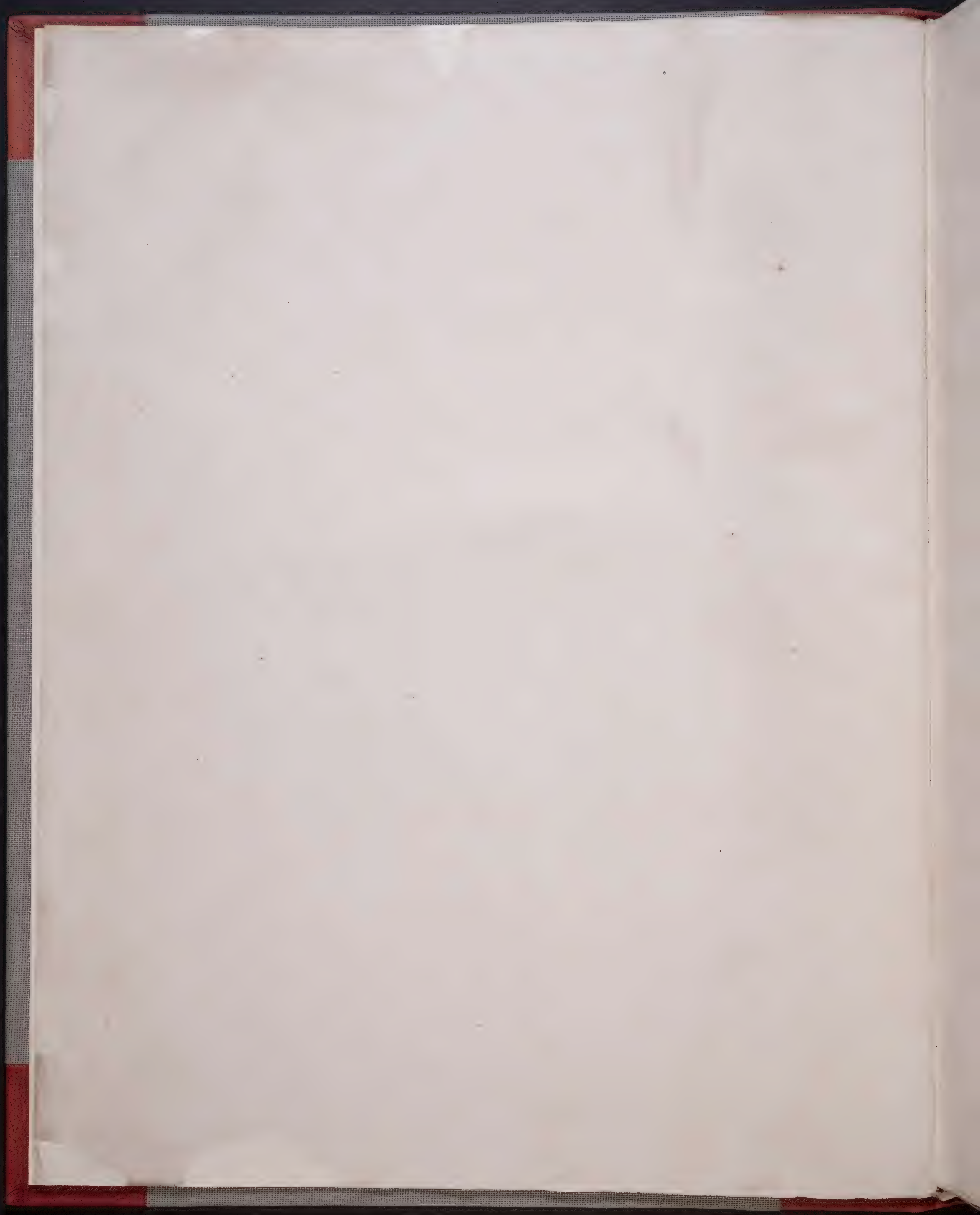
















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AMERICAN

ORNITHOLOGY;

OR,

THE NATURAL HISTORY

OF

BIRDS INHABITING THE UNITED STATES,

NOT GIVEN BY WILSON.

WITH FIGURES DRAWN, ENGRAVED, AND COLOURED, FROM NATURE.

BY

CHARLES LUCIAN BONAPARTE.

VOL. IV.



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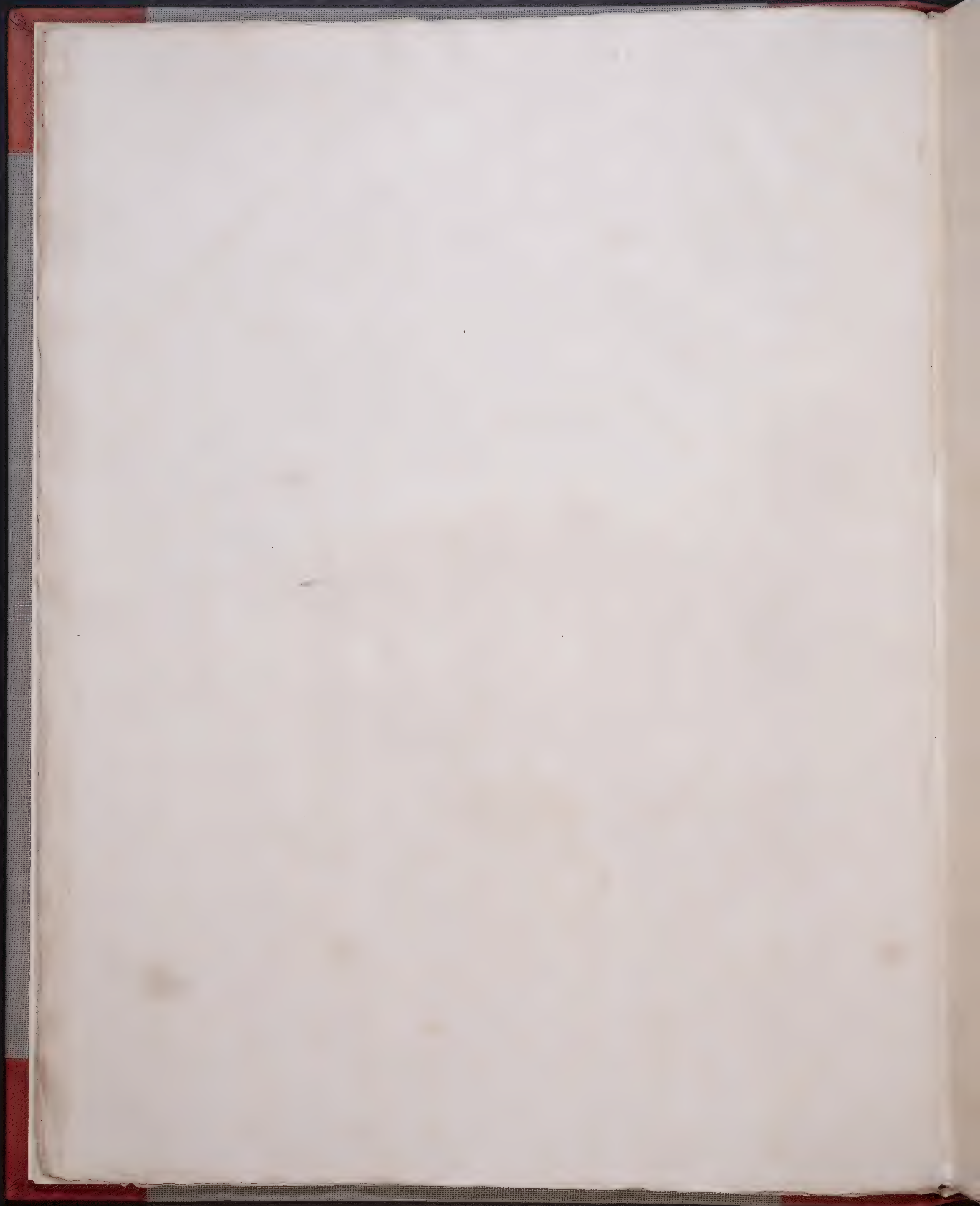
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FRANCIS HOPKINSON,
Clerk of the Eastern District of Pennsylvania.

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Drawn from Nature by A. Wilson.

Young Male Condor.
Cathartes aura.

AMERICAN ORNITHOLOGY.

CONDOR.

CATHARTES GRYPHUS.

Plate XXII. Young Male.

Vultur Gryphus, LINN. *Syst.* I, p. 121, Sp. 1. GMEL. *Syst.* I, p. 245, Sp. 1. LATH.
Ind. Orn. I, p. 1, Sp. 1. *Encycl. Brit.* XVIII, p. 695, pl. 510. HUMBOLDT, *Hist.*
Nat. in Obs. Zool. I, p. 26, pl. 8, 9.

Vultur magellanicus, LEVER. *Mus.* p. 1, pl. 1, Female.

Vultur condor, DAUD. *Orn.* II, p. 8. SHAW, *Zool.* VII, p. 2, pl. 2, 3, 4.

Cathartes gryphus, TEMM. RANZANI. *Nob. Cat. & Syn. Bds. U. S.* Sp. 2.

Gypagus griffus, VIEILL. *Enc.* III, p. 1174. *Id. Nouv. Dict.*

Sarcoramphus Cuntur, DUMERIL. *Sarcoramphus gryphus*, GOLDFUSS, *Nat. Atlas*, pl.
107, adult Male.

Sarcoramphus condor, LESS. *Orn.* I, pl. 7, adult Male.

Vultur Gryps Gryphus, KLEIN, *Av.* p. 45. BRISS. *Av.* I, p. 473. *Id. Svo.* p. 137.
BOROWSKY, *Nat.* II, p. 62.

Cuntur, LAET. *Am.* p. 401. RAY, *Av.* p. 11.

Catarte condoro, RANZ. *Elem.* VII, p. 24, Sp. 2, *tab.* XXII. *fig.* 2, adult Male.

Il Condoro, MOLINA, *St. Nat. Chili*, p. 223.

Manque, MOLINA, *Chili*, p. 236, (French edition.)

Condor, FREZIER, *Voy.* p. III. LA CONDAMINE, *Voy. Amaz.* p. 175. BRISS. *Orn.* I,
p. 473, Sp. 12. BUFF. *Ois.* I, p. 184. *Id.* (ed. 1770) I. p. 143, v. MARTINET,
Hist. Ois.

Le Condor, ou Grand Vautour des Andes, CUV. *Règn. An.* I, p. 306. *Id. ed.* 2, p. 316.

Catharte Condor, TEMM. & LAUG. pl. col. 133, adult Male, 494, head of the adult living Male, 408, young Female.

Condur Vulture, LATH. *Syn.* p. 4. *Id. Suppl.* p. 1. *Id. Suppl.* II, p. 1, pl. CXX. *Id. Gen. Hist.* I, p. 4, pl. 1, adult Male. HAWKESW. *Voy.* I, p. 75. WOOD'S *Zoography*, I, p. 371. STEVENSON, *Voy. Am.* II, p. 59.

Der Condor Geier, of German authors.

Cabinet of the Academy of Natural Sciences.

To such a degree has its history been exaggerated by fable, that the mention of the Condor immediately recalls to mind the Roc, of Marco Polo and the Arabian Tales. Some authors have indeed referred this name to it, and even go so far as to make it the subject of one of the labours of Hercules, the destruction of the Stymphalian birds. Such in fact were the stories related by the early travellers, that even when reduced to what in the judgment of Buffon was their real value, it cannot but now appear unaccountable that they should ever have found credence, and still more so that compilers should have gone on accumulating under the Condor's history not merely the tales told of it, but others collected from every quarter of the globe, however remote or different in climate, not hesitating to give currency to the most revolting absurdities. The accounts of Father Feuillée, who was the first describer, Frezier, and especially Hawkesworth's, appear however to be tolerably correct; while the ardent imagination of Garcilasso led him to indulge in the wildest extravagances in relation to this bird. Abbeville and de Laet, no less than Acosta, in his History of the Indies, ascribed to this cowardly Vulture the strength, courage, and raptorial habits of an Eagle, and even in a higher degree, thus doing him the honour to represent him as formidable to every living creature, and the dreaded enemy of man himself. Desmarchais improves if possible upon these stories, giving the Condor still greater size and strength, and stating that

it is well known to carry off in its prodigious talons a hind, or even a heifer, with as much ease as an Eagle would a rabbit! Such a creature could not of course dwell in forests, for how could it among trees display its enormous wings? They were therefore limited to savannahs and open grounds. Antonio de Solis, Sloane in the Philosophical Transactions, and even the learned la Condamine, who saw the bird himself, and certainly witnessed no such exploits as had been related of it, indulged in wild theories depending on popular tales and superstitions. The obscurity created by so much misrepresentation could not however conceal its true Vulture-like nature from the acuteness of Ray, who pointed out its appropriate place in the system. His opinion was adopted by Brisson and Linné, and it became among naturalists generally a settled point, notwithstanding the eloquently expressed doubts of Buffon, who wanted rather on account of its supposed great strength and agility to elevate the Condor to the rank of an Eagle, these qualities not permitting him to degrade it so low as the Vultures. But a still greater error of the French Pliny, as he may be on every account so appositely styled, was to consider the Condor as not peculiar to America, but as a genuine cosmopolite, of which happily there were but few, however, for otherwise the human race would not have been able to stand against them. But it was only in its imaginary character that the Condor of Buffon was truly cosmopolite, having no other existence than what was based upon absurd and ridiculous fictions gathered in all parts of the globe; for no living bird could be placed in competition with one for whose powers of flight distance was no impediment, and whose strength and swiftness united would have rendered him lord of creation.

We should, however, make some allowance for the credulity of our forefathers, in believing upon the reports of weak or lying travellers all the romantic and extravagant tales related of this

wondrous Condor. They had not, as we have, the means of personally ascertaining the sober truth. But it is almost incredible, and remarkably illustrates the force of preconceived opinions, that in the year 1830, a traveller could be found with assurance enough to impose upon us, and journals, even of respectable standing, to copy as positive and authentic, a description of a Condor of *moderate size*, just killed, and actually lying before the narrator, so large that a single quill-feather was twenty good paces long! This indeed might have lifted an Elephant, and it is quite unfortunate that Peru and Chili should no longer produce them for prey for such a bird, and that the Mastodon is now extinct. So much for human credulity, which is often exercised upon more serious occasions, with equal impudence and much worse results.

As in so many other instances of power based upon prejudice, or great reputation unjustly usurped, a near and close examination has shown the falsity of these pretensions. The wonderful Condor now proves to be nothing more than a rather large Vulture. The same has happened, as Humboldt observes, with its countrymen, the gigantic Patagonians, who are found at last not to exceed the stature of ordinary men.

Notwithstanding the faithful accounts of a few of the older authors, the true history of the Condor had remained involved in the obscurity created by mingling it with so many childish tales, when the celebrated Humboldt, studying it living with the sober eye of truth and philosophy, furnished a correct description, a good drawing, and an excellent memoir upon it. Since that time several stuffed as well as living specimens have reached the menageries and museums of the United States and Europe, which with the three plates published by Temminck, have rendered it familiar to all. It is but just, however, to mention that Latham had, long before Humboldt, given in his second Supplement a

tolerably correct description of both sexes, with a figure of the adult male, and taken also from the identical specimens, now at Vienna, and originally brought to England by Captain Middleton from the straits of Magellan, that furnished the subjects of Temminck's plates.

The adults of both sexes, and a young female, having been tolerably well represented, it is the young male that we have preferred to figure in this work, in order thus to complete the iconography of so interesting a species. And we trust that through the exertions of our artists, our figure, which is reduced three and a half times from nature, will be found for minuteness of accuracy much superior to all, owing to the extraordinary pains taken by Mr. Lawson, who besides being furnished with a correct drawing, made repeated visits to the living bird, carefully verifying its form and dimensions in all their details.

The genus *Vultur* of Linné, now the family *Vulturini*, (or *Vulturidæ*) a family first established by Duméril under the appellation of *Ptilodères*, or *Nudicolles*, though much less numerous as well as less intricate in the characters of the species than the *Falconidæ*, of which we have treated under the head of *Falco cooperii*, has nevertheless much exercised the ingenuity of ornithologists, who nearly all disagree both as to its limits and its subdivisions. With respect to the former, those recognized by us will be clear and well defined, this family being constituted of the two modern genera *Vultur* and *Cathartes*, of Illiger, which we adopt with some modifications, as will be seen hereafter. Contrary to the general practice, we discard from it the aberrant genera forming the passage to other groups, in which we prefer arranging them. The groups towards which a direct passage is the most obvious are the family of *Rapaces*, or *Falconidæ*; and some typical *Gallinæ* and aberrant Waders. With neither the *Passeres* nor the webfooted orders, (unless it may be with the

Frigate-Bird) do we perceive any immediate relations. The passage to these takes place through the intervention of the three other orders, in the first of which the genera *Gypaëtus* and *Gypogeranus* approach so near them as even to have strong claims to be included in the same family, being almost exactly intermediate between *Falconidæ* and *Vulturidæ*.

Although the *Vulturidæ* are far from exhibiting the same diversity of conformation, habits, and appetites, as the numerous tribe of the Falcons, and form indeed as a whole a much more compact mass, and much less numerous in species, yet even those naturalists, with Illiger at their head, who have left untouched the great genus *Falco*, have joined unanimously with the reformers in dividing that of *Vultur* into two great equivalent genera. This course, though we imitate it ourselves, we must confess to be more expedient than consistent, and it is probable that for the very reason that differential traits are less numerous and complicated in the different species, that the divisions have been more easily made and admitted. Let us analyze them. Illiger was the first to separate the species into his two genera *Cathartes* and *Vultur*: we say the first, excluding Storr and Lacépède, who long since with so much reason withdrew *Gypaëtus* from the genus, and not adverting to the artificial section made by Duméril in the year 1806, under the name of *Sarcoramphus*, for the stout-billed carunculated species indiscriminately. The characters assigned by Illiger were precise and natural, and the species he cited as examples correctly typical. But Temminck in adopting Illiger's two genera, misapplied the characters, and rendered them unnatural by declaring the *Vultur Percnopterus* a *Cathartes*, whilst it is in fact a slender-billed *Vultur*, as the Condor is a stout-billed *Cathartes*. Deceived by Temminck, we at first adopted this erroneous view, which we have finally rectified in our Observations on the second edition of the *Règne Animal* of Cuvier. In returning

to what we consider the principles of Illiger, as they certainly are the dictates of reason, it so happens that this genus *Cathartes*, as is often the case, is found to correspond to a geographical division, being exclusively American, whilst that of *Vultur* is in like manner confined to the old continent. The other genera which have been proposed among the *Vulturidæ* may be considered as groups of secondary importance.

Thus the three European species* belong, according to Savigny, to as many separate genera, namely, *Gyps*, *Ægyptius*, and *Neophron*. The last, restricted to its proper limits, is a very well marked subgenus, which we adopt under the name of *Pernopterus*, Cuvier. It contains to my knowledge but two well ascertained species, which are the *Slender-billed Vultures of the old continent*.

The other European Vultures, with stout bills, are comprised in my subgenus *Vultur*, composed of ten well known species. But we must confess that the *Vultur cinereus* and *Vultur fulvus* differ materially, and that even their skeletons present differences that in other cases might be considered as even more than generic, while one uniform osseous structure is found to prevail throughout the numerous species of Falcons. This observation I believe has never before been made. Savigny founded his groups, which are excellent as subdivisions, on the different conformation of the nostrils, on the tongue, aculeated on its margin in *Gyps*, and not in *Ægyptius*, and on the number of tail-feathers, which is twelve in the latter, as in the American genus, and fourteen in his genus *Gyps*, as well as in *Neophron*.

Thus are the twelve species constituting my genus *Vultur* divided into two very natural subgenera, corresponding to the two genera of Viellot, *Vultur* (comprising ten species,) and *Neophron*, (comprising but two,) the first being subdivisible into the two

* Ruppel reckons four. He makes two of *V. fulvus*, considering the *Chassefiente* of Le Vaillant a distinct species.

minor groups of Savigny. The three might indeed be considered as co-ordinate subgenera.

As for the genus *Cathartes*, it is by no means so easy to divide, and the two groups or subgenera which we admit are perhaps artificial and blended too much together. The first, comprising the Condor, the Californian Condor, and the King Vulture, that is, the *Stout-billed American Vultures*, may be called *Sarcoramphus*, a name confined by Duméril and Cuvier to those that have caruncles or fleshy appendages on the head, but to which Vieillot very justly added *C. californianus*, calling the group *Gypagus*.

The second subgenus of *Cathartes* may be called *Catharista*, Vieillot, or the *Slender-billed American Vultures*, analogous in a parallel series, where the strength of the bill is considered, to the *Percnopteri*, but having no immediate affinity with them. The only known species are the two of Wilson's work, *Cathartes aura*, and *Cathartes iota* of my Synopsis, the former of which is a link between its own group and the preceding.

The best discriminating mark between the two principal genera of this family, one which is obvious and easily understood, is the striking character of the perviousness of the nostrils in *Cathartes*, through which light appears broadly from one side to the other, while in the *Vultures* they are separated by an internal cartilaginous partition. This will make it at once evident that it was for want of proper examination that the *Percnopterus*, merely on account of its slender bill, was ever considered a *Cathartes*. The remaining characters being more of a relative than a positive kind, we shall not here notice them, except remarking that the hind toe being much shorter and set on higher up in the American genus, shows a greater affinity with the Gallinaceous birds, an affinity which may be traced in other features of their organization. The number of tail-feathers is fourteen in several species of *Vultures*, whilst no *Cathartes* has ever been found to

have more than twelve. The principal traits, both moral and physical, are the same in all the birds composing this highly natural family.

All in fact are distinguished by having their head, which is small, and their neck, more or less naked, these parts being deprived of feathers, and merely furnished with a light down, or a few scattered hairs. Their eyes are prominent, being set even with the head, and not deep sunk in the socket, as in Eagles and other rapacious birds. They have the power of drawing down their head into a sort of collar formed by longer feathers at the base of the neck: sometimes they withdraw the whole neck and part of the head into this collar, so that the bird looks as if it had drawn its whole neck down into the body. They have a crop covered with setaceous feathers, or sometimes woolly or entirely naked, and prominent, especially after indulging their voracious appetite. Their feet are never feathered like those of an Eagle, although they have been unnaturally so represented in the plates of some authors. The tarsus is shorter than the middle toe, which is connected at its base by a membrane with the outer one. The claws are hardly retractile, comparatively short, and from these birds' habit of keeping much on the ground, instead of always perching, as the *Falconidæ*, they are neither sharp pointed nor much curved. Their wings are long and subacuminate, the third and fourth primaries being longest: they are lined beneath with a thick down of a peculiar and very soft nature.

The young birds have their head entirely covered with down, which gradually falls off as they advance in age. The female is larger than the male: their plumage varies greatly with age, and they moult but once a year. The young are easily distinguished by their downy head and neck, these parts in the adult being naked, and by the absence of the caruncles which in some species

are found on the adult. These fleshy appendages are of the same nature as the wattles, &c. of Gallinaceous birds.

No part of Ornithology has been more confused in its details than that relative to the Vultures, and their synonymy, especially the European species, is almost inextricable: the old authors have heedlessly multiplied and even composed species, whilst the modern have brought together the most confused citations under those which at last they founded on the actual observation of nature. We congratulate ourselves that the task of pointing out all these errors, from which no writer without exception appears free, does not belong to us.

Vile, gluttonous, and pre-eminently unclean, the *Vulturidæ* are the only birds of prey that keep together in flocks all the year round: as cowardly as they are indiscriminately voracious, they are too pusillanimous, notwithstanding their numbers, to attack living prey, and content themselves with the abundant supply of food which is offered by the putrid carcasses of dead animals. In fact, they appear to give the preference to these, with all their disgusting concomitants, and only resort to freshly slaughtered animals when impelled by extreme hunger. Their want of courage is denoted by their crouching attitude and the humility of their demeanour. Creatures with such dispositions did not require from nature strength or powerful weapons; nothing was needed but perfection of smelling, that they might from a distance discover their appropriate food, and this faculty they possess in an eminent degree. Their nostrils have two large external apertures, and an extensive olfactory membrane within.

Though regarded with disgust for their filthy habits, these well known birds are extremely serviceable in hot climates, by devouring all sorts of filth and impurities, and thus preserving the atmosphere from the contamination of noxious effluvia. On this account their cowardice is protected by man, who in civilized

as well as savage life always looks to his own advantage, and does not disdain to make use of those for whom he cannot help feeling contempt. Besides their usefulness during life, the Vultures have an additional security in their utter uselessness when dead. In consequence of their food their body exhales a disgusting effluvium, and their flesh is so rank, stringy, and unsavoury, that nothing short of absolute famine can bring any one to taste of it. No skill nor precautions in cooking can overcome its natural bad odour, which prevails over the most powerful spices. But though not eatable themselves, they excel in picking clean to the very bones the carrion they feed upon, leaving them as bare as if they had been carefully scraped. With this food they gorge themselves to such a degree as to be incapable of flight, and hardly able to move for some time, and then allow of a very close approach. In fact their indolence, filthiness, and voracity, are almost incredible.

They are birds of slow flight at all times, and raise themselves from the ground with difficulty, though when surprised and closely pursued after overfeeding, when they are almost helpless, they can lighten themselves by vomiting up their superfluous meal, sometimes to the great annoyance of the pursuer, and then at once take flight. Their sight is exceedingly keen, and is only inferior in power to their sense of smelling, which enables them to discover their peculiar food at great and incredible distances. They are dull and heavy, fond of assembling in flocks upon trees, where they may be seen perched for hours together, sitting with their wings open as if ventilating their plumage. They walk with the body inclined forward, the wings drooping, the tail brushing the ground. When they wish to take flight, they are obliged to run a few paces, and then contract the body violently. Their flight, though slow, is protracted for a greater length of time than even perhaps that of the Eagle, though more laborious and heavy.

They elevate themselves to such wonderful heights, that as they describe circle after circle, they gradually appear no larger than a swallow, next a mere speck is visible, then disappearing altogether from the limited power of human vision. Not, however, beyond their own, for as they hover over the country beneath, they can discover a carcass or carrion anywhere over a very wide district. In the East they are well known to follow the caravans; in Africa and South America they accompany and wait upon the hunter's steps. If a beast is flayed and abandoned, calling to each other with shrill but resounding voice, they pour down upon the carcass, and in a short time, so dexterously do they manage the operation, nothing remains but the naked skeleton. If the skin should be left on the prey they discover, an entrance is soon made through the belly, by which they extract all but the bones, which are left so well covered by the skin as hardly to show that they have been at work there. Should a sickly ox or smaller animal be accidentally exposed defenceless, or from any cause unable to resist, the Vultures fall upon and devour him without mercy in the same manner. Thus in the mountainous districts of hot countries, in which they are very numerous, the hunter who wishes to secure his game dares not quit an animal he may have killed, for fear of its immediately becoming their prey. Le Vaillant, while in Africa, met with frequent losses through the rapacity of these parasites, which, immediately notified by the calling of the Crows, flocked around in multitudes, and speedily devoured large animals that he had killed, depriving him not only of his own meal, but of many a valuable specimen intended as a contribution to science. They may be frequently seen tearing a carcass in company with dogs or other ravenous quadrupeds, such associations producing no quarrel, however lean and hungry both may be. Harmony always subsists, so long as they have plenty, among creatures of dispositions so congenial. But the Eagle drives them to a distance

till he is satisfied, and only permits them to enjoy the fragments of the prey he has conquered. With the same expectation of feeding upon the leavings, they attend upon the ferocious quadrupeds of the Cat kind, and may thus indicate the vicinity of these dangerous beasts. That it is cowardice which prevents them from attacking animals capable of making any defence is evident. The innate cruelty of their disposition is often manifested towards the helpless. To a deserted lamb they show no mercy, and living serpents and whatever other minor animals they can overpower are their usual food. They are also, it is said, extremely fond of crocodiles' and alligators' eggs, to obtain which they keep watch unseen in the adjacent forest while the female is laying, and as soon as she is gone descend, and removing the sand where they are buried, greedily devour them.

The Vultures are mostly found in warm climates, although by no means afraid of cold, as they prefer the vicinity of lofty mountains; those which inhabit in the north retiring southward in winter in the northern hemisphere. Their favourite abodes are rocks and caverns among broken precipices, where they retire to sleep and to digest their meals when overfed, which happens as often as an opportunity offers: in such retreats they may be often observed in great numbers together, enjoying the exhilarating air of the morning. Their nest is made with hardly any preparation on inaccessible cliffs or other places where they can seldom be found by man. They reside generally where they breed, seldom coming down into the plains, except when frost and snow have driven all living things from the heights: they are then compelled to brave danger in pursuit of food. The Vultures generally lay but two eggs at a time, sometimes three or four, especially the North American species; and are faithfully monogamous. In their mode of supplying their young with food, there is a striking difference between them and other rapacious

birds. The latter place before their progeny the quivering limbs of their prey, that they may learn to employ their beak and talons. The Vultures, whose claws are not fitted for seizing and bearing off their spoils, disgorge into the mouth of their young the contents of their crop, from the nature of which this operation, so interesting when performed by a dove or a canary, becomes in this case one of the most disgusting imaginable.

According to Belon, the Latin name *Vultur* is but a contraction of *volatu tardus*: the name *Cathartes* imagined by Illiger, means in Greek, purger. *Condor* is a corruption of *Cuntur*, the true appellation of our species in the *Qquichua* language, derived, according to Humboldt, from the verb *cunturi*, to smell.

Although the largest of American Vultures, the Condor is inferior in size to several of those which inhabit the old continent, and even to the large Golden Vulture of eastern Europe. Both sexes are very nearly of equal size; but the superiority, if any, is found as usual upon the side of the female; so that the common statement of writers, that this sex is of less size, has no foundation in fact.

The adult male is always more than three feet long, and measures nine feet from tip to tip of the extended wings. Some gigantic individuals are met with four feet long and twelve in extent. The bill is dark brown colour at the base, somewhat of a lemon white at tip. The tongue is entire, cartilaginous, membranous, ovate-cuneate, concave beneath, serrated with spines on the margin. A longitudinal compressed caruncle, or firm fleshy crest extends from the top of the head to the front, and to the brown portion of the bill. It is rounded before and behind, a sinus on the upper border, the lower free for a short space at each extremity, papillous, or strongly wrinkled, and, as well as the cere, of a bluish colour. The nostrils are oval-linear, and with no hairs surrounding them. The skin of the neck and crop

is bare, with the exception of some scattered short and rigid hairs; it is reddish, and has two short pear-shaped processes depending from it. Two intertwined fleshy strings arise from the bill, pass over the auditory region, and descend along the sides of the neck: these fleshy cords acquire by desiccation, in stuffed specimens, the appearance of a series of tubercles or wrinkled protuberances: a double string of a similar substance passes above the eye, which is small, much lengthened, and lateral, being set far back from the bill: the irides are of an olive gray. Their cavernous structure enables the bird to swell out all these appendages at pleasure, like the Turkey: the crest, however, must be excepted, which is very dissimilar to the flaccid, pendulous cone of the Turkey, and incapable of dilatation. The orifice of the ear is very large, subrounded, but hidden under the folds of the temporal membrane. The occiput exhibits a few short brown bristles. Around the lower part of the neck above is a beautiful half collar of silky and very soft down as white as snow, which separates the naked parts from the feathered body. In front this collar is interrupted, and the neck is bare down to the black plumage: this gap in the collar can however only be discovered on close inspection. The whole plumage is of a very deep blue black; the tips of the secondaries and the greater wing-coverts on the outer web only being of a whitish pearl-gray: the first seven outer quills are wholly black, twenty-seven being white on their outer web: the third quill is the longest. The wings are three feet nine inches long, reaching nearly to the tip of the tail, but not passing beyond, as in the closely related species the Californian Condor. The tail is very slightly rounded at the end, rather short in proportion to the bird, measuring thirteen inches. The feet are bluish: the toes connected at their base by a membrane.

The female is entirely destitute of crest or other appendages.

The skin which covers the head is uniformly blackish, like the plumage, in which there is only a little cinereous on the wings: in this sex the wing-coverts, which in the male are white at tip from the middle, are of a blackish gray. This circumstance is very conclusive, inasmuch as the white forms a very conspicuous mark on the wings of the male, which has occasioned it to be said that some Condors had a white back.

For several months during the early part of their life, the young are covered with very soft whitish down, curled, and resembling that of young owls: this down is so loose as to make the bird appear a large shapeless mass. Even at two years old the Condor is by no means black, but of an obscure fulvous brown, and both sexes are then destitute of the white collar.

The following description and admeasurements are from a pair of young living birds, said to be nine months old, caught on the Peruvian Andes. One of these (which are precisely alike,) was captured by an Indian, who discovering two in the nest, ran up at great speed, fearing to be overtaken by the old ones, and succeeded in securing it by putting it in his pocket, not larger than a full grown chicken. I have carefully compared this with, and found perfectly similar to it, a bill and a quill-feather brought from the Columbia River by Lewis and Clark and preserved in the Philadelphia Museum. These remains prove the existence of the Condor within the United States, and sufficiently authorize its introduction into this work.

Length three feet nine inches. Breadth nine feet. Bill to the corner of the mouth two inches six-eighths; to the cere one inch and a half, to the down three and a quarter inches. Bill curved and hooked, with several flexures; upper mandible passing over the lower, which is rounded and scalloped: nostrils pervious, rounded-elliptical, cut in the cere. Bill outside, cere, and all the surrounding naked parts black; ears without any covering, the

skin rugose: inside of the bill yellowish white, margined with black, palate furnished with a fleshy skin, having the appearance of a row of teeth in the middle, then of a hard ridge looking like a file, and two marginal rows: tongue broadly concave, and serrated on the turned up edges with sharp pointed cutting serratures: an elevation of the skin indicating the frontal caruncle; the place where the bristles begin to appear is also indicated by an elevation. Eye full and rounded: iris blackish: membrane of the throat very dilatable: head and neck covered by a thick silky down of a brownish black colour; on the front more dark and bristly; general colour dark brown, each feather having a banded appearance, tipped with more or less of umber; quill and tail-feathers black, with a gloss of blue. The number of tail-feathers is twelve, the closed wings not reaching beyond, though very nearly to the tip. Feet black: acrotarsus beautifully colligate, acrodactylus scutellated: the whole leg measures one foot in length, of which the tarsus is five and a quarter inches, and the middle toe and nail six, the nail being one and a half: lateral toes connected with the middle as far as the first joint by a membrane; the inner two and a half inches long without the nail, which is one and a half; the outer with the nail a quarter of an inch shorter; hind toe articulated inside, bearing on the ground only with the point of the nail, an inch and a half long, the nail one inch more, and much incurved: sole of the foot granulated: fat part of the heel large and rough. The feet have been generally described as white or whitish, owing to their being commonly stained with the excrements, which the bird throws much forward, but they are in fact of a fine blue horn colour when washed clean, and these birds seemed to be fond of washing themselves.

The Condor is diffused over the continent of South America from the straits of Magellan, extending its range also to Mexico and California, and the western territory of the United States

beyond the Rocky Mountains. It was not seen by Lewis and Clark until they had passed the great falls of the Columbia, and it is by no means common or numerous any where in the northern parts of America, those individuals that have been observed here appear to have been stragglers from their native country, which is no doubt South America. It might even be limited to the great chain of the Andes, especially their most elevated ranges, being plentiful in Quito, Peru, New Granada, and Antioquia, and much more rare where they are less lofty, the Condor inhabiting pretty nearly the same altitude with the *Cinchonæ* and other subalpine plants. It is moreover, according to the observations of Humboldt, the invariable companion of the Guanaco for an extent of nearly three thousand miles of coast, after which this animal is no longer seen, but the Condor continues to be met with much beyond this, as if quite indifferent to climate, or because it can regulate it by varying its elevation with the change of latitude. In the eastern or even southern United States a Condor has never been seen, though the King Vulture of South America has been occasionally observed. The chief abode of the Condor is indeed on the highest summits of the Andes, some of which are covered with perpetual snow, and is fixed by Humboldt at between three thousand one hundred and four thousand nine hundred metres. Every time, says he, that I have been herborizing near the limits of perpetual snow, we were sure to be surrounded by Condors. These mountains and the forests that clothe their sides are the Condor's home, and from these their excursions are extended over the whole neighbourhood to the very sea, from which they may be often seen hovering at prodigious heights and describing vast circles, but always ready to lower themselves by degrees whenever they espy a chance of satisfying their voracious appetite. They are only known, however, to descend towards the seashore during the rainy season, corresponding to our winter,

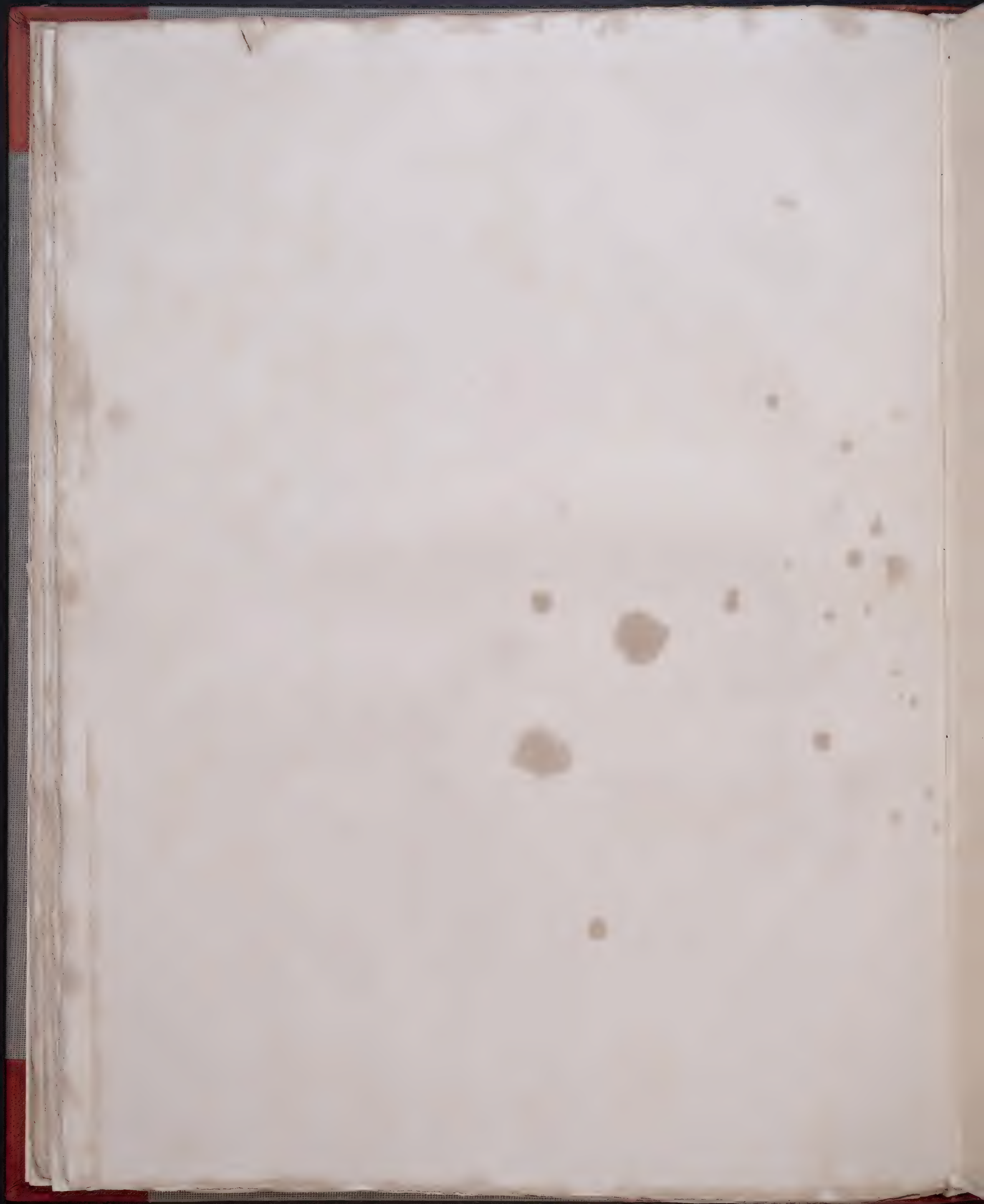
when they come in search of food and warmer weather: they then obtain the bodies of large fishes or marine animals, such as Whales or Seals, and the prospect of finding these is their principal attraction to the shore: they arrive here at evening, and as a journey of several hundred miles requires for them but little time or exertion, as soon as their meal is digested, and they begin to feel lighter, they return to their favourite rocks, often during the following day. They have sometimes been killed at sea, floating on the dead body of a Whale which they were tearing for food. They exhibit the common propensity of their tribe for carrion, and nothing but the urgent stimulus of hunger can bring them to attack living creatures, and then their cowardice will not allow them to meddle with any but the feeble or diseased which are incapable of defending themselves. They will also combine together to overpower their prey, if they see the least danger of resistance. A single Cougar, or even a courageous bird, will drive from their prey a whole troop of Condors, which however seldom amounts to more than five or six, as they do not collect in such numerous bodies as their fellow Vultures. When feeding on a Cow, a Guanaco, or a Paco, they first pick out the eyes, then tear away and devour the tongue, and next the entrails, at last picking the flesh from the bones. Smaller animals they generally swallow whole. Guided by their amazingly acute faculty of smell, the Condor will arrive, performing circular evolutions, from the highest regions of the atmosphere upon a carrion, and often, trusting to their powers of digestion, they swallow bones and flesh together. The Indians, too indolent to keep clean their butchering or similar places, and often neglecting to bury their dead with sufficient carefulness, have a great veneration for this bird and others of its kind, to which they trust to rid them of such nuisances. The regard with which they are treated makes them so familiar, that Humboldt relates his being able to approach within two

yards of a troop of Condors before they retreated, though he had other persons in his company. When full-fed the Condor will remain motionless on a projecting rock, and has then a sinister appearance; if on the ground, however, he allows of a close chase before having recourse to his ample wings, hopping along before his pursuer. When on the contrary he is pressed by hunger and light from emptiness, he will soar to extreme heights in the atmosphere, especially in clear weather, whence he can discover prey at any possible distance. They lay in the most inaccessible parts of the Andes, near the limit of perpetual snow, on the most broken and terrific precipices, where no other living creature can dwell. Nests have been found at the extraordinary elevation of fifteen thousand feet. Their eggs are usually laid on the naked rock, or with very little preparation, and never on trees, which they even avoid alighting on, unlike their congeners in this respect, and always on rocks or the ground, the straightness of their nails making this easier for them. The eggs are white, and three or four inches long. The young are entirely covered with very soft whitish down, and the mother is said to provide for them during a long time. The facts relative to their propagation are not, however, sufficiently ascertained, for how are we to verify assertions relating to operations performed so much beyond the reach of ordinary observation.

Authors describe various modes that have been resorted to for destroying the Condors in their native countries, where they sometimes become a nuisance; such as poisoning carrion, seizing them by the legs by hiding under the skin of a calf, and by building narrow enclosures in which is placed putrid flesh, when the birds flying down and feeding greedily, are unable to take wing again for want of space to get a start by running. But we scarcely see any advantage in such stratagems, since they may be caught with running knots while disabled by repletion, or even,

as it is reported, knocked down with clubs ; and in any case we are at a loss to reconcile such persecutions with the protection so wisely granted them both by civilized and savage man.

In captivity, the Condor is easily tamed if taken young, and does not refuse any kind of animal food whatever, nor do they appear to dread or suffer in the least from the extreme changes of the climate in Europe and the north-eastern parts of America. But it is almost impossible to keep the adults, which are always exceedingly wild and mischievous. They are incredibly tenacious of life : the bones are so hard as to resist a musket-ball, to which also the thick down of their plumage is impenetrable. They can resist strangulation for hours, even when hanged and hard pulled by the feet. A remarkable fact is that in domesticity they will not refuse water, drinking it in a very peculiar manner, by holding their lower mandible in it for some time, and using it as a spoon to throw the liquid into their throat. The individual represented in our plate was remarkable for playfulness and a kind of stupid good nature. During Mr. Lawson's almost daily visits for the purpose of measuring and examining accurately every part for his engraving, he became so familiar and well acquainted that he would pull the paper out of the artist's hands, or take the spectacles from his nose, so that Mr. Lawson, seduced by these blandishments, and forgetting its character in other respects, does not hesitate to declare the Condors the gentlest birds he ever had to deal with.







*Glaucous-winged
Pelican*

Pintail Sandpiper

Red-breasted Snipe

GLOSSY IBIS.

IBIS FALCINELLUS.

Plate XXIII. Fig. 1.

Tantalus falcinellus, LINN. *Syst.* I, p. 241, sp. 2. GMEL. *Syst.* I, p. 648, sp. 2. LATH. *Ind.* II, p. 707, sp. 14. BRUNN. *Orn.* sp. 167. SCOP. *Ann.* I, sp. 131. KRAM. *Austr.* p. 350. BOROWSKY, III, p. 72. *Faun. Helv.* RETZ, *Faun. Succ.* p. 171, sp. 135. NILSS. *Orn. Succ.* II, p. 43, sp. 160.

Ibis falcinellus, VIEILL. *Nouv. Dict.* ID. *Enc. Met. Orn.* TEMM. *Man. Orn.* II, p. 598. SAVI, *Orn. Tosc.* II, p. 327. NOB. *Obs. Nom. Wils. Orn. note to No. 199.* ID. *Syn. Birds U. S.* sp. 241. ID. *Cat.* ID. *Spec. Comp.* WAGLER, *Syst. Av. Ibis*, sp. 1. ROUX, *Orn. Prov.* pl. 309. GOLDFUSS, *Nat. Atlas*, pl. 95.

Ibis sacra, TEMM. *Man. Orn. ed.* 1, p. 385.

Tantalus igneus, GMEL. *Syst.* I, p. 649, sp. 9. LATH. *Ind.* II, p. 708, sp. 16, very old individual.

Tantalus viridis, GMEL. *Syst.* I, p. 648, sp. 8. LATH. *Ind.* II, p. 707, sp. 15. MONTAGU, in *Linn. Trans.* IX, p. 198.

Tantalus mexicanus? ORD, in *Journ. Ac. Philad.* I, p. 53, (and perhaps of other authors, in that case the *Acalot* of Ray and Buffon, and its derivatives.*)

Numenius castaneus, BRISS. *Orn.* V, p. 329, sp. 5. ID. *8vo.* II, p. 294, (old indiv.)

Numenius viridis, BRISS. *Orn.* V, p. 326, sp. 4, t. 27, fig. 2. ID. *8vo.* II, p. 293, two years old.

Numenius viridis, S. G. GMEL. *Reis.* I, p. 167. ID. in *Nov. Comm. Petrop.* XV, p. 462, t. 19, young.

* The following are the indications of that obscure species, the Mexican Ibis:—

Tantalus mexicanus, GMEL. *Syst.* I, p. 652, sp. 18. LATH. *Ind.* II, p. 704, sp. 4.

Ibis mexicana, of later compilers. *Ibis acalot* of French compilers and Dictionaries.

Numenius mexicanus varius, BRISS. V, p. 335, sp. 7. ID. *8vo.* II, p. 295.

Acacotl, RAY, *Syn.* p. 104, sp. 5. WILL. p. 218. ID. *Engl.* p. 296.

Acalot, BUFF. *Ois.* VIII, p. 45.

Mexican Ibis, LATH. *Syn.* III, pt. 1, p. 108, sp. 5. ID. *Gen. Hist.* IX, p. 146, sp. 5.

This bird is said to inhabit Mexico: it will not be superfluous to remark, that the proportions assigned to it are much larger than those of our *Ibis falcinellus*.

- Numenius igneus*, S. G. GMEL. *Reise*. I, p. 166. *Id. in Nov. Comm. Petrop.* XV, p. 460, t. 13, old specimen.
- Tringa autumnalis*, HASSELQUIST, *Iter Palest.* II, p. 306, sp. 26, 27, two years old.
- Falcinellus*, GESSNER, *Av.* p. 220.
- Falcata*, GESSNER, *Id. Av.* p. 116, with a bad figure.
- Falcinellus, sive Avis falcata*, ALDROV. *Av.* III, p. 422 and 423. JONSTON, *Av.* p. 105.
- CHARLETON, *Excit.* p. 110, sp. 7. *Id. Onomatz*, p. 103, sp. 7.
- Falcinellus Gesneri & Aldrovandi*, WILLOUGHBY, *Orn.* p. 218.
- Arcuata minor*, &c. MARSIGLI, *Danub.* V, p. 42, tab. 18, adult, 20, young.
- Numenius sub-aquilus*, KLEIN, *Av.* p. 110, sp. 8.
- Falcinellus, or Sithebill*, RAY, *Av.* p. 103, sp. 3. WILL. *Orn.* p. 295 tab. 54. *Id. Engl.* p. 295, tab. 54, fig. 4.
- Le Fauconneau! Falcinellus*, SALERNE, *Orn.* p. 322.
- Courlis vert*, BUFF. *Ois.* VIII, p. 29, (ed. 1783,) VIII, p. 379, *Vers. Germ.* OTTO, XXII, p. 170, fig.
- Courlis d'Italie*, BUFF. pl. enl. 819, adult Male.
- Courlis brillant*, SONNINI, *Buff. Ois.* XXII, p. 238, old Female.
- Ibis vert*, CUV. *Règn. Anim.* I, p. 485. *Id. 2d ed.* I, p. 520. ROUX, *loco citato*.
- SAVIGNY, *Egypt. Ois.* tab. VII, left hand fig. two years old.
- Ibis noir*, SAVIGNY, *Hist. Nat. et Mythol. de l'Ibis*, p. 36, tab. 4.
- Ibis sacré*, TEMM. *Man. Orn.* first ed. but not of Cuvier.
- Ibis falcinelle*, of most French authors and of the Dictionaries.
- Chiurlo*, &c. *Storia degli Uccelli*, IX, p. 439, old Male.
- Ibi falcinello*, RANZANI, *Elem.* III, pt. VIII, p. 185, sp. 3.
- Mignattajo*, SAVI, *loco citato*.
- Bay Ibis*, PENN. *Arct. Zool.* II, p. 460, *A.* LATH. *Syn.* III, pt. 1, p. 113, sp. 13. *Id. Suppl.* p. 67. *Germ. trans. by BECHST.* V, p. 67, tab. 81, young. LATH. *Gen. Hist.* IX, p. 152, sp. 15. *Brit. Miscell.* tab. 18. MONTAG. *Orn. Dict. Suppl.*
- Green Ibis*, LATH. *Syn.* III, pt. 1, p. 114, sp. 13, young. *Linnean Trans.* IX, p. 198. MONTAG. *Orn. Dict. Suppl.* LATH. *Gen. Hist.* IX, p. 154, sp. 18.
- Glossy Ibis*, LATH. *Syn.* III, pt. 1, p. 115, sp. 14, old specimen. *Id. Gen. Hist.* IX, p. 154, sp. 17. *Brit. Zool.* 1812, II, p. 30. MONTAG. *Orn. Dict. Suppl.*
- Brazilian Curlew*, *Nat. Miscell.* tab. 705?
- Sichelsnabliker Nimmerzatt*, BECHST. *Nat. Deutschl.* IV, p. 116. MEYER & WOLF, *Tasch. Deutschl. Vog.* II, p. 352. NAUM. *Vog. Nacht.* t. 28, adult Male.
- Braune Ibis*, BREHM. *Lehrb. Eur. Vog.* II, p. 528.

THOUGH it may appear very extraordinary, it is not less true, that one of the two species of Ibis worshipped by the ancient Egyptians, their Black Ibis, has a claim to be included in our work as being an occasional visitant of the eastern shores of these states. This fact, which we would be among the first to disbelieve were we to read of it in the eloquent pages of Buffon, is authenticated by the specimen here figured, which moreover is not a solitary instance of the kind. Thus, instead of being limited to a peculiar district of Egypt, as stated by Pliny, Solinus, and others, and reiterated by the host of compilers, this celebrated bird is only limited in its irregular wanderings by the boundaries of the globe itself.

The credit of having added this beautiful species to the Fauna of the United States is due to Mr. Ord, the well known friend and biographer of Wilson, who several years ago gave a good history and minute description of it in the Journal of the Academy of Philadelphia, under the name of *Tantalus mexicanus*? His excellent memoir would have been sufficient to establish its identity with the species found so extensively in the old world, even if the specimen itself, carefully preserved in the Philadelphia Museum, did not place this beyond the possibility of doubt.

Among the natural productions which their priests had through policy taught the superstitious Egyptians to worship, the Ibis is one of the most celebrated for the adoration it received, though for what reason it is not easy to understand. The dread of noxious animals, formidable on account of their strength or numbers, may induce feelings of respect and veneration, or they may be felt still more naturally for others that render us services by destroying those that are injurious, or ridding man of anything that interferes with his enjoyments, or by ministering to his wants. We can conceive how a sense of gratitude should cause these to be held sacred, in order to insure their multiplication, and that

this sentiment should even be carried to adoration. But why grant such honours to the wild, harmless, and apparently useless Ibis? It is perfectly well proved at this day that the Ibis is as useless as it is inoffensive, and if the Egyptian priests who worshipped the Deity in his creatures declared it pre-eminently sacred; if while the adoration of other similar divinities was confined to peculiar districts, that of the Ibis was universal over Egypt; if it was said, that should the Gods take mortal forms it would be under that of the Ibis that they would prefer to appear on earth, and so many things of the kind, we can assign no other reason than the fact of their appearing with the periodical rains, coming down from the upper country when the freshening Etherian winds began to blow, when they were driven in search of a better climate by the very rains that produce the inundation of the Nile, doing Egypt such signal benefit. The Ibis, whose appearance accompanied these blessings, would disappear also at the season when the south desert winds from the internal parts of Africa brought desolation in their train, which could be averted only by the periodical return of the *circumstances represented by the Ibis*, which seemed like Providence to control them, and was therefore declared the real Providence of Egypt, though merely the concomitant, and by no means the cause of those blessings, by which they profited in common with all. It thus became so identified with the country as to be used as its hieroglyphic representative, and was said to be so attached to its native land that it would die of grief if carried out of it, and it was on account of its fidelity to the soil that it was honoured as its emblem. So good a citizen could not of course from selfish motives migrate periodically, and its absence must have been for its country's sake! Hence the ridiculous tale current throughout antiquity, and strengthened by the testimony of Herodotus, Ælian, Solinus, Marcellinus, copied by Cicero, (who went so far as to assign to the Ibis proper

instruments for the purpose, such a strong bill,) by Pliny and others, and credited in our days to a certain extent by Buffon, who thus accounted for the divine honours it received. I allude to the story of their attacking and destroying periodically on the limits of civilization immense flocks of small but most pernicious winged serpents generated by the fermentation of marshes, which without the generous protection afforded by the Ibis would cause the utter ruin of Egypt.

Still more unaccountable is it that naturalists and philosophers should have been so long in finding out the true meaning of this oriental figure. How could the Ibis with its feeble bill, whose pressure can be hardly felt on the most delicate finger, and which is only calculated for probing in the mud after small mollusca and worms in places just left bare after an inundation, how could such a weapon cut to pieces and destroy so many monsters if they had existed. How could these learned men (notwithstanding that Herodotus relates his seeing heaps of their bones or spines,) believe for an instant in the existence of these winged serpents; and why try to reconcile truth with a barefaced falsehood, or with expressions manifestly figurative. We are aware that some modern translators of Herodotus, by forcing the Greek original to meet their own views, have attempted to write instead of winged serpents, the word *locustæ*, which insects are known to come in vast swarms, causing periodically great devastation even in some parts of Europe. But nothing is gained by this plausible and apparently learned supposition, since the conformation of the Ibis would prevent it from making any havoc among these enemies, whose being winged would not moreover save their author from the difficulty, locusts having certainly neither bones nor spines. The figure intended is still plainer, and Savigny, who first pointed it out, could in my opinion have saved himself many a page of his classical dissertation, and without any recourse to the idea of the

Cerastes, for to me it is evident that by the winged serpents were originally signified the exhalations from the marshes, so noxious in Egypt when brought by the south-easterly or *Typhonian* winds, against which the Ibis was observed to direct its flight and to conquer, aided, it is true, by the powerful sweeping *Etherian* winds.

Be this as it may, no animal was more venerated by the Egyptians than the Ibis: there was none whose history was more encumbered with fictions. Notwithstanding the ridicule thrown upon it by Aristotle, the Ibis was believed to be so essentially pure and chaste, as to be incapable of any immodest act. The priests declared the water to be only fit for ablutions and religious purposes when the Ibis had deigned to drink of it. Yet by some unaccountable contradiction Roman authors made of it an unclean animal. It is needless here to repeat all the fanciful and extravagant things said of the Ibis among a people whose credulity, superstition, and wildness of imagination knew no bounds. It was represented by the priests as a present from Osiris to Isis, or the fertilized soil, and as such was carefully brought up in the temples, those first menageries of antiquity. It was forbidden under pain of severest punishment to kill or injure in the least these sacred beings, and their dead bodies even were carefully preserved in order to secure eternity for them. It is well known with what art the Egyptians endeavoured to eternize death, notwithstanding the manifest will of nature that we should be rid of its dreaded images, and that many animals held sacred shared with man himself in these posthumous honours. In the Soccora plains many wells containing mummies are rightly called birds' wells, on account of the embalmed birds, generally of the Ibis kind, which they contain. These are found enclosed in long jars of baked earth, whose opening is hermetically closed with cement, so that it is necessary to break them to extract the mummy. Buffon obtained several of these jars, in each of which

there was a kind of doll enveloped in wrappers of linen cloth, and when these were removed the body fell in a blackish dust, but the bones and feathers retained more consistence, and could be readily recognized. Dr. Pearson, who received some of these jars from Thebes, gives a more minute description, as does also Savigny. E. Geoffroy, and Grobert, also brought from Egypt some very perfect embalmed Ibises, and I have availed myself of every opportunity to examine such as were within my reach, and especially those preserved in the Kircherian Museum at Rome, one of which, containing a most perfect skeleton, is now before me.

By far the greater part of the jars contain nothing but a kind of fat black earth, resulting from the decomposition of the entrails and other soft parts buried exclusively in them. Each bird is enclosed in a small earthen jar with a cover used for the purpose. The body is wrapped up in several layers of cloth, about three inches broad, saturated with some resinous substance, besides a quantity of other layers fixed in their place by a great many turns of thread crossed with much art, so much indeed that it is by no means easy to lay the parts bare for inspection without injuring them. Space appears to have been considered of much value in preparing these mummies, and every means was used to secure them within the least possible compass, by bending and folding the limbs one upon another. The neck is twisted so as to bring the crown of the head on the body, a little to the left of the stomach, the curved bill with its convexity upward is placed between the feet, thus reaching beyond the extremity of the tail: each foot with its four claws turned forward, one bent upward and elevated on each side of the head; the wings brought close to the sides, much in their natural position. In separating them to discover the interior, nothing of the viscera nor any of the soft parts remain, the bones exhibit no traces of muscle or

tendon adhering to them, and the joints separate at the least touch. Most of these mummies, it must be admitted, are not of the species of which we are writing, (and which also is but seldom represented hieroglyphically,) but of the white kind, which was more venerated, the *Ibis religiosa* of Cuvier; and some authors even deny that a well authenticated Black Ibis has ever been unwrapped. Complete birds even of the white species are extremely rare. Cuvier obtained the entire skeleton from an embalmed subject, and Dr. Pearson was so fortunate as to discover the perfect bird in two brought among other mummies from Thebes. They have been accurately described in the scientific journals of England under the name of true Egyptian or Theban Ibis. The Egyptian Ibis of Latham is however nothing but the *Tantalus Ibis*.

Buffon by means of his mummies was enabled to verify the real size of the Ibis, and as he found two bills entire among those he examined, he settled the genus to which the sacred bird belonged, and stated very correctly that its place was between the Stork and the Curlew, where later naturalists have arranged it. But it is to be regretted that a preconceived opinion should have so blinded him that he could not see the furrows of the upper mandible, which do exist in a very eminent degree, as I have personally ascertained, notwithstanding his statements to the contrary, in making which he must have had before him the bill of the *Tantalus*, which he mistook for the Ibis. These furrows it is of the more consequence to note, inasmuch as they form the principal discrimination between the genera *Tantalus* and *Ibis*, and serve to put an end to a controversy to which the sacred Ibis has given rise.

Although every traveller in Egypt has used his exertions to collect all the facts relative to a bird which plays such a part in the sacred legends of that country, a bird associated with so many

of the wonders of antiquity, yet it was for a long period a question among naturalists and scholars to what species the name of Ibis was properly to be applied. As, however, contrary to the general practice of the ancients, the description of the bird did exist, and even a representation, tolerably good, among their sculptured hieroglyphics, it could only be because it was supposed that divine honours must have been the reward of signal services that any dispute could ever arise on the subject. A sacred bird must of course, it was concluded, be a great destroyer of venomous animals, which the timid Ibis *is not*; hence the misapplication of the name. To such an extent did this idea prevail, and predominate over all others, that Buffon, who could only feel contempt for the idle tales related of the Ibis, so involved their true history as to attribute to them the most violent antipathy to serpents, on which he supposed they fed, and destroyed them by all possible means, and assigns to them the habits of a species of Vulture. Others maintained, notwithstanding its long and falcate bill, that it was in fact a Vulture, which was indeed the most natural conclusion after they had begun by giving it such habits. Cuvier himself, who cleared up and rectified every thing else in relation to the Ibis, because he found in a mummy some skins and scales of serpents, most probably embalmed as companions, which was frequently done with different kinds of animals, declared it a true snake-eater.

Two different kinds of Ibis were known to the ancients, and looked upon by the Egyptians as sacred; the White, common throughout Egypt, and the Black, which was said to be found only in a peculiar district. It is the latter of which we are now to treat, a bird long known to, but not recognized by naturalists; whilst the white was only rediscovered, in later times, by the courageous Abyssinian traveller Bruce, who first among the moderns obtained correct notions respecting it. Bruce's Ibis

has been since proclaimed by Cuvier and Savigny the true Ibis, in place of the *Tantalus Ibis* of Linné, which he so called for want of knowing the real Ibis, believing this to be it, though but very seldom even found in Egypt. This opinion, which though more plausible than that which it superseded, was still erroneous, originated with Perrault, and was adopted and maintained by Buffon, Brisson, Linné, Blumenbach, and all others until lately, when Colonel Grobert returning from Egypt presented Fourcroy with mummies which enabled Cuvier first to perceive that the Ibis was not a *Tantalus*, but a true *Ibis*, which genus he did not then distinguish from *Numenius*. Savigny in the year 1806 by an admirable work on the Ibis, put the question at rest.

The sacred White Ibis, though not in reality peculiar to Egypt, where it is seen only at certain seasons of the year, does not however migrate to far distant countries: it is spread throughout Africa, and species extremely similar to it are found in India and Ceylon. But it is not our province to treat of it, and it has already formed the subject of several volumes.

We have already remarked that Buffon justly indicated the natural relations of the Ibis by stating that it was intermediate between the Stork and the Curlew. What he said of the species we shall extend to the three families to which the three birds belong in our system. In the transition from one group to another Nature seems often to make the passage by insensible intermediate steps, and it sometimes happens that the species placed on the limits of two groups belong decidedly to one or the other, and even when it may be impossible to say to which they ought to be referred, we still cannot admit them as types of an intermediate group. At other times the intermediate species form a small group by themselves, and although a portion of such a connecting group shows great affinity to that which follows it, while another portion is equally connected with a preceding group,

yet the two parts are still more related between themselves. So it is with the family of *Tantalidæ* or *Falcati*, formed from the genus *Tantalus* of Linné, and composed of but two very natural genera, *Tantalus* and *Ibis*, the former of which retains a resemblance to the *Ardeidæ* or *Cultrirostres*, while the latter claims a stronger affinity with the *Scolopacidæ* or *Limicolæ*. Nothing, in our opinion, shows more the propriety and even necessity of distinguishing this small intermediate group from those which touch upon it.

Buffon and Brisson, who used as a character the artificial one of the curved bill, did not separate the *Tantalidæ* from the Curlews, which are real *Scolopacidæ*, though somewhat allied to *Ibis*. Linné, whose philosophical tact was seldom at fault, and who crowded all the *Scolopacidæ* into his arbitrary genera *Tringa* and *Scolopax*, did not however confound the two families, for he employed as a distinguishing mark of his genus *Tantalus* the important character of the naked face. He was followed by Latham and others. The *Ibis* of Lacépède is equivalent to the *Tantalus* of Linné, though by giving the genus this name, (which Latham had done in English,) he obtained the credit of being the founder of the genus *Ibis*, but unjustly, as he included in it all the smooth and thick-billed *Tantali*. To Illiger belongs the merit of having first made the distinction between them, and Cuvier, Vieillot, Temminck, and most others have followed his course, though some German authors call the restricted genus *Falcinellus*. The present family was instituted by Illiger under the name of *Falcati*. Vieillot and Ranzani adopted it under the name of *Falcirostris*. Boie called it "of the *Ibides*," but Cuvier and Latreille placed the two genera of which it is composed within the respective limits of the two families which they connect, and which they called *Cultrirostres* and *Longirostres*. Although Mr. Vigors and the modern English school have not adopted it, (probably because it interfered with their whimsical quinary

arrangement,) they do not dismember it, but force the whole into their family *Ardeidæ*, with which even *Ibis* has, it is true, more real, though less apparent affinity than with *Scolopacidæ*: as for *Tantalus* there could be no doubt. Goldfuss has done the same.

The *Tantalidæ* all have a very long bill, stout at the base, subulate, falcate, and cylindrical at tip, the edges bent in and sharp. Their corneo-membranous tongue is remarkably short, flat, cuneate-acuminate, entire, posteriorly furcate-emarginate. Their face is destitute of feathers, and their throat somewhat dilatable into a pouch. Their neck is long. Their feet long, equilibrate, and always four-toed: the naked space of the tibia considerable: the toes long, bordered with a narrow membrane connecting the fore toes at base. The hind toe is articulated with the tarsus low down, and is half as long as the middle, bearing with its whole length on the ground. The wings are moderate, obtuse, tubercular. The tail short, composed of but twelve feathers. The falcate shape of the bill will at once distinguish them from any of the *Ardeidæ*; and the nakedness of the face from the *Scolopacidæ*.

The *Ibis* may be known from the true *Tantalus* by having a comparatively slender bill, depressed and curved from the base; instead of being very stout at the base, compressed, and curved only towards the tip. In *Ibis*, the upper mandible is deeply furrowed its whole length, and entire. In *Tantalus* it is not furrowed, and is notched. The nostrils are pervious and wide open in the latter; half-closed by a membrane in the former. The head is warty and entirely bald in *Tantalus*, while in *Ibis* the nakedness generally extends over the face and throat merely.

Tantalus only contains four species, one in each of the five divisions of the globe, Europe excepted. In *Ibis* there are about twenty well ascertained species, three inhabiting the United States, of which the present is the only one that ever visits

Europe. In South America are found several beautiful species. The true Ibises may be subdivided into two secondary groups; those with the tarsi reticulated, and those which like the present species have them scutellated. The former have shorter feet, and by their stouter bill, and the more extended nudity of the face, approach nearest to the *Tantali*. Temminck wishes to divide them into the sections *Sylvains* and *Riverains*. Dr. Wagler distributes them into three sections, which he calls *Ibides lepopodiæ*, *Ibides aspidolepopodiæ*, and *Ibides aspidopodiæ*! this last section being formed for our species alone, principally on account of its having the middle toe-nail pectinated.

In the Ibises, as in their kindred *Tantali*, the females are considerably smaller than the males, but perfectly like them in colours. The young differ greatly from the adults until the third year. Their moult is annual and regular.

They are dull and stupid birds, fearless and allowing of a very close approach, so that they are easily shot. They frequent inundated places, the shores of lakes and rivers, and particularly grounds just left bare by floods, where their favourite food abounds. They live in flocks, but when once paired the sexes remain united for life. They feed on insects, worms, mollusca, and the Ibises also on vegetable substances: they search their food in mud, and often throw it up with their bill, catching it as it descends in their throat. Shells, even of considerable size, they swallow entire, trusting to the muscular power of their stomach to crush them, for which their bill is too weak. The *Tantali* are also well known to use their powerful bills against fishes and reptiles, but the true Ibis never, notwithstanding the popular belief to the contrary. When satisfied with feeding, they retire for digestion to the highest trees, where they stand in an erect posture, resting their heavy bill upon their breast. The *Ibides* more than the *Tantali* migrate periodically and to vast

distances. The habit of resting upon trees, as indeed the whole animal economy (a thing never sufficiently considered in the formation of natural families,) of the Ibis separate them from the *Scolopacidæ*. They are monogamous; build on high trees, both sexes assisting in the construction of the nest: the female lays two or three whitish eggs, which she alone incubates, but is then fed by the male, and both feed the young, which require for a long period the care of the parents, and do not leave the nest till able to flutter. They walk slowly, often sinking deeply in the mud while watching for prey: their gait is measured, and they never run rapidly. Their flight is heavy, but high and protracted. Their voice is loud and monotonous. In domesticity, like many other birds, they become omnivorous. As to anatomical conformation, the Ibises resemble the genera of *Scolopacidæ*: a very thick muscular stomach occupies nearly two-thirds of the anterior capacity of the abdomen: the swelling of the œsophagus at its origin is considerable and very glandulous: the intestines form an elliptic mass, composed of a double spiral, besides first a turn bordering the gizzard; they measure upwards of three feet in length in the species we treat of. There are two rather short and obtuse cæcums.

The Bay or Glossy Ibis is twenty-six inches in length, and more than three feet in extent. The bill is of a greenish lead colour, somewhat reddish at tip, and varies much in length in different specimens,—the longest we have measured was five and a half inches from the corners of the mouth: in many it is but four inches: it is slender, thicker at base, and higher than broad, rather compressed and obtusely rounded at tip, and less arcuated than in the other North American species; the upper mandible is somewhat longer than the lower, thickened and subangulated at base, and flattened at its origin: two deep furrows run from the nostrils to the extremity, dividing it into three portions; the edges

of both mandibles are quite entire, and being bent in, they form together when closed another deep channel: the upper mandible is filled inside to a great extent with the bony substance of the bill, so as to be hardly concave. The under mandible follows exactly the curve of the upper, and is but half as high on the sides: it is strongly canaliculated below from the base to the tip; the channel from the tip to the middle is narrow, but then widens considerably, and is extremely wide at base, where it is filled by a naked membrane forming a kind of jugular pouch. The nostrils are placed near the base of the mandible, at the origin of the lateral furrows, and are oblong, narrow, longitudinal, furnished in the upper part with a naked membrane. The tongue is sagittate and less than three-fourths of an inch from the acute point of its lateral lobe to its tip: the jugular pouch is dusky: the small naked part of the face, the lora and region around the eyes are of a greenish gray, which passes into whitish on the limits of the feathers: the irides are dark brown. The crown of the head and cheeks are of a brownish black with purplish reflections; the throat immediately below the pouch is of the same colour, though somewhat less brilliant, and with more green reflections; the feathers of the head are pointed, those of the occiput being moreover suberectile: the whole base of the plumage is of a pale sooty gray. The feathers of the back and wing-coverts are compact and rounded; those of the inferior parts are rather loose in texture at their margins: hind head, neck, upper portion of the back, inner wing-coverts to the shoulder of the wing, and all the internal parts of the body, together with the thighs, of a vivid brownish chesnut, very brilliant and purplish on the interscapular region: lower portion of the back, rump, vent, tail and wings entirely, including the upper and lower coverts and the long axillary feathers, glossy golden green, with purple reflections, except the primaries, which are pure golden green. The wings

are one foot long, and when closed reach precisely to the tip of the tail, which is four and a half inches in length, and even at the tip: the first primary is hardly shorter than the third, the second longest. The feet are rather slender, and the tarsus much longer than the middle toe: their colour is greenish lead, somewhat reddish at the joints: tarsus scutellated, four inches long; the naked part of the tibia nearly three inches; the toes are slender, the middle without the nail is two and a half, and the hind toe one inch long: the nails are long and slender, but truncated and of a dark horn colour: the middle one is the longest, and slightly curved outwards, dilated on the inner side to a thin edge, which is irregularly and broadly pectinated. This character is particularly worthy of remark, inasmuch as none of the genus but this exhibit it, and it may be of great use in deciding at once whether mummies belong to this species or not, though we regret that no one appears ever to have thought of having recourse to it to determine this controverted question.

The adult female is perfectly similar to the male in all except size, being very sensibly smaller.

Under two years of age they resemble the adult, but the head and neck are of a much darker colour, the chesnut having nothing vivid, but rather verging upon blackish brown, and all speckled with small dashes of white disposed longitudinally on the margins of the feathers, and disappearing gradually as the bird advances in age: the under parts and the thighs are of a blackish gray, more or less verging upon chesnut according to age, the back acquiring its brilliant colours in the same manner. It is in this state that most authors, Brisson especially, have described their *Numenius viridis*, which for a long time usurped the privilege of somewhat representing the type of the species.

The young has these white lines longer and more numerous, and the lower parts of a darker blackish gray.

This bird does not appear in its full plumage until the third year, and is so different from the adult as to furnish an excuse for those who in that state have considered it as a distinct species. The bill is brown: the feathers of the head and of the throat are dark brownish with a whitish margin, wider in proportion as the bird is younger: the breast, belly, vent, under tail-coverts and thigh-feathers are grayish brown or slate colour: the lower portion of the back, wings, and tail of a somewhat golden green, passing into reddish, with but very little gloss in specimens under one year old, and richer as they advance in age. The feet are wholly blackish.

No bird ranges more widely over the globe than the Glossy Ibis: it has long been known to inhabit Europe, Asia, Oceanica, and Africa, where it gained its celebrity. It is now proclaimed as American, though we are not able to tell how numerous or extended the species may be on this continent. We can hardly doubt, however, that it is found along almost all the shores of North and South America, though far from common in any of these States. From the fact of this bird having been known to stray occasionally from Europe to far distant Iceland, we may infer that the individuals met with in the United States are merely stragglers from that part of the world, just as the *Scolopax grisea* of the same plate is an American bird well known to push its accidental migrations as far as the old continent.

Lest the discovery of the Glossy Ibis on the continent of America should give weight to an erroneous supposition of Vieillot, we think proper to mention that the Cayenne Ibis of Latham, *Tantalus cayanensis*, Gmel., represented by Buffon, pl. enl. 820, (Vieillot's own *unseen Ibis sylvatica*) is by no means this bird, but a real species examined by us, and which must be called *Ibis cayanensis*.

Let it come whence it may, the Glossy Ibis is only an occasional visitant of the United States, appearing in small flocks during the

spring season at very irregular periods, on the coasts of the middle states. The specimen Mr. Ord described, and which produced a strong sensation even among experienced gunners and the oldest inhabitants as a novelty, was shot on the seventh of May, 1817, at Great Egg Harbour, and we have seen others from the same locality and obtained at the same season, as also from Maryland and Virginia. A beautiful specimen preserved in the American Museum at New York, was shot a few miles from that city in June, 1828. In central Italy they arrive periodically about the middle of April, or the beginning of May, and pass a month among us, after which they disappear entirely, and a pair of the Glossy Ibis is of very rare occurrence, though they have been known to remain here so late as August. A few pairs are brought every year in spring to the market of Rome, and in Tuscany and near Genoa they are more plentiful. The Italian and United States specimens that have come under my observation were all adults. During their stay among us they occupy places near marshes and grounds subject to be overflowed, where there are no trees, but abundance of grass, and plenty of their favourite food. They search for this collected in flocks of from thirty to forty, and explore the ground with great regularity, advancing in an extended line, but closely side by side: when they wish to leave one side of the meadow for another, they do not take wing, but walk to the selected spot. When they have alighted on a newly discovered rich spot of ground, they may be observed on it for hours, continually boring the mud with their bill. They never start and run rapidly like the Curlew and Sandpiper, but always walk with poised and measured steps, so that Ælian says the Ibis's motions can only be compared to those of a delicate virgin. The body is kept almost horizontal, the neck much bent, like the letter S, and lifting their feet high. If alarmed, or when about to depart, they rise to wonderful heights, ascending first in

an inclined but straight flight, and then describing a wide spiral, the whole flock are heard to cry out in a loud tone, their voice resembling that of Geese: finally having reached what they consider the proper height, taking a horizontal direction, they soon disappear from the sight: their flight is vigorous and elevated, their pectoral muscles being very thick: they fly with the neck and legs extended horizontally, like most Waders, and as they float along, send forth from time to time a low and very hoarse sound. Their food consists chiefly of small aquatic testaceous mollusca, and they do not disdain such small worms and insects as they may meet with: they are supposed to live chiefly on Leeches, (whence their Tuscan name *Mignattajo*,) but erroneously, none of these having ever been found in their stomachs either by Prof. Savi or myself. From what is observed in Europe, the regular migration of these birds appears to be in the direction of south-west and north-east. Every circumstance leads to the belief that they come to us in central Italy through Sardinia and Corsica from the coasts of Barbary, and continue their journey hence to the vast marshes of eastern Europe and the Caspian Sea, where they are well known to breed, though nothing is yet ascertained of their mode of propagation. Be this as it may, the Glossy Ibis in the north and west of Europe is a very rare bird, and merely a straggler, whilst it is common at its passage in Poland, Hungary, southern Russia, Turkey and Greece, especially the islands of the Archipelago. It is found also in Austria and Bavaria, and in other parts of Germany, especially on the Danube; and occasionally near the lakes of Switzerland, but hardly ever in Holland, the north of France, or England. In Sweden it is also met with, though extremely rare: it has been observed in Gothland, along the marshes of the interior parts of the Island, and been killed in Scania: it is registered among the rare birds that visit Iceland. It has been found common along the rivers of

the Islands of Java and the Celebes; is periodically known during seven months in Egypt, coming in October and disappearing in March: it is later in coming, and disappears after, and in quite a different direction from the white sacred kind: like this they follow the overflowing of the Nile, retiring gradually as the water becomes too deep. It is very common about the Black, and especially the Caspian Seas, the great rendezvous and breeding place of Waders, where appears to be their chief quarters, and whence they spread into Siberia and Tartary. Great numbers are also met with in the Ural Desert. The Arabs in Egypt kill the Glossy Ibis by shooting them, and catch many in nets, so that in autumn the markets of the cities of Lower Egypt, that of Damietta especially, are abundantly furnished with Ibises of this species, as well as the White, now no longer sacred, which are exposed for sale with the heads cut off. When taken alive, these birds appear really very low spirited, and reject food: they stand upright, the body horizontal, the neck much bent, the head inclined, moving it from right to left, advancing or withdrawing it, and striking the ground with the point of their bill. They often stand on one leg like the Stork: are by no means shy, and will open their bill to defend themselves if you stretch out your hand, but their bite is scarcely felt.

It should be mentioned that although this is the Black Ibis of antiquity, it is by no means that of systematical writers, which they describe as really black, with a red bill and feet. Such a species is very seldom if ever seen in Egypt.

PECTORAL SANDPIPER.

TRINGA PECTORALIS.

Plate XXIII. Fig. 2.

Pelidna pectoralis, SAY, in *Long's Exp.* I, p. 171.*Tringa pectoralis*, NOB. *Cat. Birds U. S.* ID. *Synops.* sp. 250. ID. *Specch. comp.**Tringa campestris*? LICHT. *Cat.* II, *Vogel.* p. 74, sp. 764.*Tringa cinclus dominicensis*? BRISS. *Av.* V, p. 219, sp. 12, pl. 24, fig. 1.*Chorlito a cou brun*? AZARA, IV, p. 284, sp. 404.*Alouette de mer de St. Domingue*, BRISS. *loc. cit.**Philadelphia Museum.*

THIS humble species, well marked, though closely allied to several other Sandpipers, is, as well as I can judge, accurately described and figured by Brisson; but since then unnoticed even by compilers, his description had become obsolete, when Say found the bird in the western territory, and we replaced it in the records of the science. We have since shot it repeatedly on the shores of New Jersey, where it is common. The species appears to be spread throughout the States, extending farther into the interior than most of its family: beyond the Mississippi it is very common; many flocks of them were seen by Major Long's party both in the spring and autumn at Engineer Cantonment, and it is often met with in small parties on the coasts of the middle states in the latter part of autumn. It also inhabits the West Indies, and, if we are correct in our reference to Azara, is found in Brazil and Montevideo.

Unlike other Sandpipers, this is not addicted to bare sandy places, but on the contrary is fond of damp meadows, where it shows some of the habits of the Snipe. Solitary individuals are

often seen, starting up from before the sportsman's feet much in the manner of that bird.

The family to which this bird belongs has been admitted by all authors, under various names, and comprehending more or less aberrant genera. It was first established by Illiger, but he excluded from it those which by an unimportant deviation are destitute of a hind toe, which he placed in his artificial family of *Littorales*, while he included in it some true *Charadriidæ* on account of the presence of a rudiment of this member. Vieillot took the same view, calling the two artificial families *Helionomi*, and *Ægialites*; as did Ranzani and Savi under the names of *Limicole* and *Tachidrome*; and Mr. Vigors erred in like manner by distributing the genera between his too extensive families of *Charadriadæ* and *Scolopacidæ*. The arrangement of Cuvier and Latreille is in this instance much more consonant to nature: these authors called their better composed, though still far from perfect family, *Longirostres*.

This family, which we shall call *Limicolæ* or *Scolopacidæ*, is strictly natural, especially since we have still farther reformed it by withdrawing the genus *Himantopus*, with which we had encumbered it in our Synopsis. The family now comprises the six genera *Numenius*, *Tringa*, *Totanus*, *Limosa*, *Scolopax*, and *Rhynchæa*, all possessing the most marked affinity in form and habits.

The *Scolopacidæ* have either a moderate or generally a long bill, slender, feeble, and extremely soft, being partially or entirely covered with a nervous and sensitive skin: it is nearly cylindrical, and mostly obtuse at the point. Their face is completely feathered, and their neck of a moderate length and size. The feet, though rather long, are moderate and quite slender; the tarsus is scutellated: but the chief character which, combined with the bill, will always distinguish them from the allied families, consists in the hind toe, which is short, slender, articulated high up on the

tarsus, and the tip hardly touching the ground: in some quite typical species this toe is entirely wanting, and this fact corroborates what we have so often repeated in our writings, that the mode of insertion, or use made of this toe is of more importance than its being absent or present. In all the *Limicolæ* the wings are elongated, falciform, acute and tuberculated; and the tail rather short.

The females are generally larger than the males, but luckily for naturalists, similar to them in colour. I say luckily, for as the young differ greatly from the adults, and as the moult which takes place twice a year produces additional changes in the confused plumage of most of these birds, sexual diversity, if it existed, would render the species still more difficult to determine.

All the *Scolopacidæ* inhabit marshy, muddy places, and around waters; and never alight on trees. On the ground they run swiftly. Their food consists of insects, worms, mollusca, and other aquatic animals, which they seek in the mud, feeling and knowing where to seize their prey without seeing it, by means of the delicacy of touch of their bill. They are monogamous; breed on the ground in grassy marshes, or on the sand; and lay mostly four pyriform eggs, both parents sitting upon them, and afterwards attending their young with care, though these latter leave the nest, run about, and pick up food as soon as hatched. All these habits contrast strongly with those of the Ibis, which can only be forced into this family on account of the softness of the bill, and its great similarity to that of the Curlews.

Our genus *Tringa* is much more extensive than that of most modern, though much less so than that of former writers, for we arrange in it all the *Scolopacidæ*, whose bill, short, or moderately so, straight or slightly curved, is soft or flexible for its whole length, and with the point smooth, depressed, somewhat dilated and obtuse; not taking into consideration the feet, especially the

hind toe, which we think in this case hardly proper to represent subgeneric divisions. Ornithologists will perceive at once from this that our genus thus constituted reunites in a natural group species that were dispersed by Linné in his genera *Tringa* *Scolopax* and *Charadrius*; and even some that Latham placed in his restricted genus *Numenius*. It coincides more nearly with the better formed genus *Tringa* of Brisson, and especially of Vieillot, Temminck, and Ranzani, but with the addition of their *Arenaria* or *Calidris*; and with the same addition, is wholly included in the *Actitis* of Illiger; although that learned systematist does not cite under his comprehensive genus a single typical *Tringa*, and probably never examined one, as they do not possess the character he assigns to the group "pedes colligati." Our *Tringa* embraces and is formed of the groups *Calidris*, *Pelidna*, *Falcinellus*, *Machetes*, *Eurynorhyncus* and *Arenaria* of Cuvier; and we subdivide it pretty nearly into these very groups, which we regard as subgenera, adding moreover to them another which we call *Hemipalama*.

All our *Tringæ* have a bill compressed at the base, with both mandibles furrowed each side their whole length, the lower a little the shorter: the nostrils are in the furrows, basal, linear, and pervious, but half closed by a membrane: their tongue is moderately long, slender, subfiliform, canaliculated above, entire and acute. The tarsus is slender, longer, or subequal to the middle toe, and always scutellated: the fore toes rather elongated, and slender, the hind toe when present, is extremely short, slender, much elevated, and hardly reaching the ground: the nails are moderate, compressed, curved and acute. The wings moderate for this family, though in reality long, with the first primary longest; the tertials and scapulars shorter than the primaries. The tail is rather short, subequal to the wings when closed, and always of twelve feathers and no more.

With the exception of the subgenera *Falcinellus*, distinguished

by an arched bill, and *Calidris*, by a short, straight one, and both three-toed, all our *Tringæ* are tetradactyle, having the short hind toe. With the exception of my subgenus *Hemipalama*, whose character is to have the fore toes all connected at base by a membrane, and of *Machetes*, which has only the outer ones connected, all the *Tringæ* have the feet cleft to the base. Of the species that remain after the separation of these four well marked groups, and which are still the most numerous, we form our subgenus *Tringa*. We must not however pass by unnoticed the *Eurynorhyncus* of Nilsson, a group so important as perhaps to merit generic distinction: it is the *Platalea pygmæa* of Linné, of which a single specimen of uncertain nativity is known.* In this, by an extreme development of the *Tringa* character, the bill is remarkably flattened and widened at tip, somewhat in the manner of the Spoonbill.

In the Sandpipers the female is similar to the male, being only somewhat larger. The young differ from the adult, and they moult twice a year, changing greatly the colours of their plumage. These are a mixture of white and cinereous, changing in summer to rufous and black.

The Sandpipers are maritime birds that live in flocks, oftentimes composed of different species, on sandy beaches or muddy shores, preferring mostly salt water. They migrate with the changes of the seasons along coasts and rivers, and are seldom seen in the temperate climates of North America and Europe, except during autumn, winter, and more especially in spring, when they are the most numerous. They retire to the north to breed, which they do socially among the grass near the water, but never in our climates. They feed on insects, mollusca, and other small animals, which they seek in soft ground by thrusting in their flexible bill, or among the rejectamenta of the sea. They run

* See Thunberg, Av. Sv. Holm. 1816, p. 194, tab. vi.

rapidly, and generally fly near the surface of the water in a straight line, and during the day, only short distances. Their flesh, though esculent, is by no means palatable, being too fishy: they grow amazingly fat in autumn, though their fat is not firm, but very oily. They are caught however in Italy by spreading nets on their feeding grounds, and in the United States great numbers are destroyed by the gun.

Spread over all the globe, some of the species even, the Sandpipers are very difficult to distinguish from one another, marked traits being few, and detailed descriptions applying mostly to individual specimens. The species have been wantonly multiplied by superficial observers, and too much reduced perhaps by scientific men. We must chiefly rely on the relative dimensions of the bill and the length of the tarsus in fixing them. In North America are found at least ten of the subgenus *Tringa*, most of which likewise inhabit Europe, that has eight: the Pectoral Sandpiper is the only one besides the *T. pusilla* of those American registered in our Synopsis that is not found in Europe.

This new species, though it is quite as large, if not larger than the *Tringa alpina* has a shorter bill; which is besides reddish at base, distinguishing it at once from all the species it could be confounded with, since each of them has the bill entirely black: the *T. maritima* and *T. platyrhynca* have a similarly coloured bill, but are otherwise too well marked to be mistaken; the former by the restricted naked space of the tibia, and the latter by the depressed form of its bill.

The Pectoral Sandpiper is eight and a half inches long, some females being nearly nine: the bill is little more than an inch long, compressed throughout, reddish yellow at base, the rest black, and with a few Snipe-like punctures near the tip. The crown of the head is black, each feather margined with rufous: the orbits, a line over the eye, and the forehead narrowly are

whitish, minutely dotted with blackish; the irides are dark: a very distinct brown line passes from the eye to the upper mandible: the cheeks, neck above, sides of the neck, and beneath down to the breast are grayish with a rufous tinge, and beautifully streaked with blackish, occupying the middle of each feather, along the shaft: surrounded and well defined (in perfect specimens,) by these markings the throat and chin are of a purer white than in other *Tringæ*: the remaining lower parts from the breast to the lower tail-coverts, including the flanks and long axillary feathers are white, the base of the plumage dark plumbeous, and a few blackish streaks along the shafts of some of the flank and vent feathers: the feathers of the neck above, owing to the circumstance of the blackish central line widening considerably, become gradually dusky, the feathers there being merely bordered with the grayish buff. The interscapular region, the scapulars and small wing-coverts are shining black with greenish reflections; they are margined with ferruginous, and near the exterior tips with whitish: the lower part of the back, the rump, and the upper tail-coverts are jet black and without margins. The wings are five inches long, lined with white, which predominates on the under wing-coverts: these are however a little varied with blackish and gray: the primaries are dusky as well as the outer wing-coverts, and are slightly edged with whitish: the shaft of the outer quill is white; of the others entirely dusky: the first primary is longest, and after the second they decrease rapidly. The tail is two inches to the tip of the lateral feathers, and a quarter of an inch more to the tip of the middle ones, which are longest by that much, and somewhat tapering, and are black edged with rufous, while the others are pale dusky, margined with white all around the tip. The feet are greenish yellow, the bare space above the knee five-eighths of an inch: the tarsus very nearly one inch, and equal to the middle

toe; the outer toe is connected at the very base with the middle by a very small membrane hardly visible in young individuals, which is also the case with *T. platyrhynca*: the nails are of a blackish horn colour. Such is this bird as it appears in the end of summer and early in autumn on the New Jersey coasts, still apparently in its perfect nuptial dress, or nearly so. Mr. Say informs us that all the individuals of the many flocks observed at Engineer Cantonment both in the spring and autumn were of equal size; and we have also found the sexes to agree in this respect, perhaps more than is usual in other Sandpipers: in the spring dress, according to the same author, the colour of the upper part of the bird is much paler, almost destitute of black, and the feathers margined with pale cinereous. The upper part of the head is always darker than any part of the neck, and margined with ferruginous: the plumage of the neck beneath and the breast does not appear to undergo so much change as that of the upper part of the body. We have not seen the bird in this plumage, but it will be evident to every ornithologist conversant with the Sandpipers that the specimens described by Say were still in the winter dress, and we may conclude that the changes in this species are analogous to those of its allies.

Several specimens of both sexes that we shot in New Jersey, evidently young birds, as they were killed at the same season as the adults described, are considerably paler and duller, the tints being blended and ill defined: the white even of the throat is dingy, the quills and tail-feathers almost uniformly dusky and destitute of margins: they have not the least trace of the outer toe membrane.

RED-BREASTED SNIPE.

SCOLOPAX GRISEA.

Plate XXIII. Fig. 3.

See WILSON'S *American Ornithology, Red-breasted Snipe, Scolopax noveboracensis*, Vol. VII, p. 49, pl. 58. fig. 1, for the summer dress.

Scolopax grisea, GMEL. *Syst.* I, p. 658, sp. 27. LATH. *Ind.* II, p. 724, sp. 33. *Suppl.* I, p. 444, sp. 42, winter dress. TEMM. *Man. Orn.* II, p. 679. NOB. *Obs. Wils.* sp. 205. ID. *Cat. and Syn. Birds U. S.* sp. 267, ID. *Specch. Comp.* sp. 206. ID. *Monog. Scolop. in Obs. Cuv.* p. 115, sp. 2.

Scolopax noveboracensis, GMEL. *Syst.* I, p. 658, sp. 28. LATH. *Ind.* II, p. 723, sp. 32, summer dress.

Scolopax Paykulli, NILSS. *Orn. Suec.* II, p. 106, sp. 186, tab. xi.

Scolopax leucophæa, VIEILL. *Gal. Ois.* II, p. 110, tab. 291, changing to the summer dress.

Scolopax grisea, VIEILL. *Nouv. Dict.* winter dress.

Totanus griseus, VIEILL. *Nouv. Dict.* winter dress.

Totanus ferrugineicollis, VIEILL. summer dress.

Totanus noveboracensis, SABINE, *Zool. App. Franklin's Exp.* p. 687, summer dress.

Macroramphus griseus, LEACH, *Cat. Mus. Brit.*

Limosa scolopacea, SAY, in *Long's Exp.* II, p. 170, winter plumage.

Beccaccia grigia, RANZ. *Elem.* III, pt. VIII, p. 162, sp. 5.

Becassine grisea, VIEILL. *Nouv. Dict.* III, p. 358.

Becassine ponctuée, TEMM. *loc. cit.*

Brown Snipe, PENN. *Arct. Zool.* II, sp. 369. LATH. *Syn.* V, p. 154, sp. 26. ID. *Gen. Hist.* IX, p. 216, sp. 25. MONT. *Orn. Dict. with a good fig. in the Suppl.* winter dress.

Red-breasted Snipe, PENN. *Arct. Zool.* II, sp. 368. LATH. *Syn.* V, p. 153, sp. 26. ID. *Gen. Hist.* IX, p. 215, sp. 24, summer dress.

Graubraune Schnepfe, MEYER & WOLF, *Tasch.* III, p. 46.

Philadelphia Museum.

WE can add nothing to the excellent account given by our predecessor of this remarkable species, but as he only figured it in its summer and more familiar dress, our representation of the

winter plumage will not be thought superfluous upon referring to our elaborate synonymy, and still less if we bear in mind that even a distinct genus has been instituted for it in this vesture, when it chanced to come under more critical inspection. We shall therefore merely dwell upon the literary and systematical history of the species, referring the reader to Wilson for its natural one.

In its winter plumage the adult Red-breasted Snipe, then called Brown Snipe, is so different from the young and from the perfect bird in summer dress, that it is no wonder that it should have been considered a distinct species, especially as it is the only Snipe that undergoes such changes, and analogy could therefore no longer serve to guide us. While passing gradually from one plumage to another, the feathers assume so many appearances as to excuse in some degree even the errors of those who have been led to multiply the nominal species by taking a wrong view of the genus to which it belonged.

Pennant, soon followed by Latham, was the first to make known our Snipe, which they described in both vestures, and the bird was registered accordingly in the ill digested compilation of Gmelin. Wilson perceived that the two supposed species were one and the same, retaining for it the name of *Scolopax noveboracensis*, which appertained originally to the summer dress alone. That given to the winter dress is now however with more propriety adopted by all modern ornithologists. As some birds of the old continent are known occasionally to stray to the American shores,* so this common American bird visits accidentally the north of Europe, and especially its islands. There are several instances of its having been killed in the British isles, where more than one

* The *Tringa pugnax* of Europe, we are informed by Mr. Cooper, who has compared the specimen with one of this species from Austria in analogous plumage, has been shot on Long Island in the State of New York.

English specimen is preserved, small parties even of these birds having been seen there at different periods and in their different dresses. But these instances are by no means so frequent as reported in authors, the *Limosa rufa* and *Tringa islandica* having been mistaken for it. A specimen in ambiguous plumage, straying into Sweden from the marshes of Lapland, (where they may be more common) afforded Nilsson the opportunity of contributing his part to the confusion, but as he gave a figure, besides describing the bird with his characteristic accuracy, it was at once detected. Since Temminck, it is only wilful obstinacy or gross ignorance that can persist in regarding as species the different states of a bird so well marked in its natural genus as to deserve a subgenus for itself, and still more on account of its habits than its conformation, (notwithstanding Temminck's statements to the contrary,) as will be evident from the following generalities on the genus *Scolopax*.

This genus, as instituted by Linné, and adopted by authors from Latham to Wilson, was, like *Tringa*, a great receptacle, though with the advantage of not containing a single species that is not still admitted as of at least the same family. But however extensive it may have been, had Linné been consistent in arranging under it all the species that possessed the character he assigned to it, he ought to have added to it the greater part of his *Tringæ*, many of which took rank unperceived in both genera. Cuvier rectified this course, thus forming a vast genus *Scolopax*, more extensive than our whole family of *Scolopacidæ*. His subgenus *Scolopax* corresponds, however, exactly to my genus of that name, which I subdivide into three natural subgenera, *Rusticola*, *Scolopax*, and *Macroramphus*, which is the present bird. Illiger first reduced the genus *Scolopax* within proper limits, but including, it is true, *Rhynchæa*, since established by Cuvier as a genus. Modern ornithologists in general agree with us, except that some, as

Vieillot and Savi, consider *Rusticola* a true genus, leaving the name of *Scolopax* to the rest. *Macroramphus* and *Scolopax* are in fact more closely related than is *Rusticola* to any of them.

All the species of our genus *Scolopax* are very similar as to the bill, which in all is long, slender, straight, compressed, especially at base, where it is elevated, soft and flexible its whole length, with the point depressed, dilated, tumid and obtuse: owing to the desiccation of the delicate nervous apparatus of this part, it becomes wrinkled after death, exhibiting at the point a dorsal groove and numerous indentations. Both mandibles are furrowed to the middle on each side; the upper, serrated inside along the palate with spinelike processes pointing backwards, is terminated by an internal knob; the lower being shorter, channelled, and somewhat truncated: the nostrils are in the furrows, basal, marginal, linear and pervious, but half closed by a membrane. The tongue is moderate, filiform and acute. The head is in all large, compressed, and angular, low forward and high behind: the eyes are very large, placed high and far back, but perhaps less so in the bird which is more immediately the subject of our remarks: the neck is of moderate length, and stout; the body compressed and very fleshy.

But if they have all these traits in common, the feet, tail, and wings present material differences. The feet are in all, it is true, moderately long, slender, and four-toed, there being to this no exception as in the *Tringæ*. But in *Rusticola* there is no naked space on the tibia, whilst it exists, though small, in *Scolopax*, and is considerable in the present subgenus. In this the tarsus is much longer than the middle toe, while in the true Snipes it is subequal, and in the Woodcocks decidedly shorter. In the present the outer toe is connected to the first joint with the middle by a membrane, whilst in the two others all the toes are cleft: in this and *Scolopax* the hind nail is falcate and acute, as well as

the others, and projects beyond the toe, which is not the case in the Woodcocks, which have that nail quite blunt and drawn back. On the other hand, *Macroramphus* agrees with *Rusticola* in the tail, that part having the regular number of twelve feathers, whilst in the typical Snipes the number of feathers as well as their shape varies amazingly in the different, and otherwise strikingly similar species. Some have it of twelve, others of fourteen, sixteen, eighteen, and one even of *twenty-four* feathers, a number before unheard of in any other bird whatsoever. In all these groups the tail is nevertheless short, equal, or more or less rounded. In both the groups of Snipes the first quill is the longest; but in the species of Woodcocks the quills vary in length and shape, affording the same anomalies and useful marks as the tail-feathers in the true Snipes. In the European Woodcock the primaries are of equal breadth and the two first longest, while in the American the three outer quills are very narrow, linear, and the fourth and fifth longest.

The females in this genus are similar in colour to the males, but larger, considerably so in the American Woodcock. They moult twice in the year, but the present is the only one that varies much with age or season.

It will not be wronging any to call them all stupid birds, though the present is less so: this only of its genus is gregarious, associating and flying in numerous flocks. Like the Snipes, and contrary to the Woodcocks, they do not dwell in damp woods or forests, but frequent open marshy grounds and morasses: but unlike the Snipes, they prefer the vicinity of the sea. They might indeed be called salt-water Snipes, in contradistinction to the others, which are fresh-water Snipes. Their flight is high, rapid, and irregular, having nothing of the heaviness of the Woodcocks. The flesh of all these birds is exquisite food, and much sought after.

The *Rusticola* of Vieillot, which we adopt as a subgenus for the Woodcocks, is distinguished, and even from most water birds, by the want of nudity of the tibia, which is completely covered with feathers as in land birds. It contains but the two species alluded to, that are closely allied, though they have specific traits that might constitute genera in other cases. This shows the difficulty in our science of knowing where to seek for generic and specific traits in the different groups. The two species of Woodcocks vary greatly in their respective habits, one being a summer, the other a winter visitant in temperate climates, and one of course retiring south, the other northward from them. Some authors prefer for this group the name of *Scolopax*, because it is to its type that the Greeks gave this name.

Our subgenus *Scolopax*, of which we have published a monograph in our Observations on the second edition of Cuvier's Animal Kingdom, is composed of nine or ten species, all of which, with their characteristic details, will be carefully figured in our inedited work "Lithographic Monography of obscure genera of Aquatic Birds." In these the tail-feathers furnish the specific characters. The number, shape, and disposition of these afford a sure clue, as in *Numenius* it is the rump, under wing-coverts, and long axillary feathers which are our best guide to a knowledge of the species. Without this clue they cannot well be distinguished, and those who undertake to make phrases with this object in a group to which they have not the clue, will only make pedantic nonsense, as is done every day. This very natural group is called *Telmatias* by Boie, and *Gallinago* by the English.

As for *Macroramphus*, as we have observed, it forms the transition to *Totanus*, which would be enough to show the impropriety of Boie's course in considering the genus *Scolopax* as a family of itself. Temminck's name of *Becassine Chevalier* is peculiarly descriptive, and alone contradicts his unjust censure of Dr. Leach's

genus, a group whose scientific characters were first laid down by our friend Mr. Say, though he referred the species to *Limosa*.

In its winter plumage the Red-breasted Snipe instead of the mottled garb in which it is familiar, is of an uniform dusky-cinereous: the specimen lying before us is eleven and a half inches long and nineteen in extent. The bill is two and a quarter inches long, of a dull greenish, the tip is black, and obtains the strongly marked dorsal groove that so well distinguishes a *Scolopax* from the allied genera. The prevailing dusky-cinereous colour extends over the head, neck and wing-coverts, the back and scapulars being of a lighter dusky-cinereous, and each feather darker on its margin and tip: a broad line from the upper mandible passing over the eye, and the lower orbit, are white: between the eye and bill is a dusky line; the irides are brown: the cheeks, throat and upper portion of the breast are pale cinereous, each feather being margined with whitish: the lower part of the back, the rump and upper tail-feathers are white, beautifully and closely fasciated with black: the breast, belly and thighs are white, the sides being spotted and waved with blackish: the lower tail-coverts are white with short black bands, narrower than those of the upper parts. The wings are six inches long: the lesser wing-coverts of the colour of the body, but they are margined with whitish; the middle and greater wing-coverts are darker with pure white margins and a little white along the shafts: the primaries are plain blackish-dusky, the inner one slightly edged with white: the secondaries are broadly margined and narrowly shafted with white: the first quill is longest, the shaft white: the under wing-coverts and long axillary feathers are white, fasciated with black. The tail is two and a half inches long, composed of twelve feathers, all full and rounded, the two middle a little longer, and marked like the coverts already described, that is white and densely fasciated with black bands. The feet are of a

dull green: naked space on the tibia one inch long: tarsus nearly one inch and a half: middle toe without the nail hardly an inch: hind toe more than a quarter; the toes webbed at base, the outer web reaching to the first joint of the outer toes, the inner being hardly visible.

Wilson's description of the summer plumage being sufficient, we omit it here, though admitting of much more detail: in few words it may be stated that however great the apparent difference, it may be reduced to this: 1. All those parts that are plain cinereous in winter take on a mottled appearance, being strongly tinged with reddish, and varied with black and yellowish. 2. The anterior parts that are white, such as the superciliar line, and breast, become reddish. The strongly characteristic marks of the other parts remain unchanged.

The young birds of the year have the plumage above generally black, the back of the head dusky, and the feathers broadly margined with bright rufous, the superciliar line, and the inferior parts are of a dingy white, inclining to rufous; this colour predominates on the breast, where the feathers, as well as on the flanks and the superciliar line, have numerous dusky dots: the middle tail-feathers are terminated by reddish.

Notwithstanding the statements of Wilson, we do not perceive any difference in plumage in the female, which is merely of a larger size. As the species breeds in high northern latitudes, visiting the temperate regions of America in spring and autumn, on its passage to and from its winter quarters, it is the more extraordinary that it should not equally extend these regular migrations to Europe.

58a



Wilson's Phalarope.
Phalaropus Wilsonii.

Ring-billed Gull.
Larus delawarensis.

Sanderling.
Puffinus pacificus.

WILSON'S PHALAROPE.

PHALAROPUS WILSONII.

Plate XXIV. Fig. 1, Adult. Plate XXV. Fig. 1, Young.

See WILSON'S *American Ornithology*, *Gray Phalarope*, *Phalaropus lobatus*, Vol. IX, p. 72, pl. 73, fig. 2, for a very bad figure and imperfect account; and a much better one illustrating the same figure in the second edition of the same volume, called by Mr. ORD, *Supplement to the American Ornithology of Wilson*, under the name of *Brown Phalarope*, *Phalaropus lobatus*, p. 232.

Phalaropus Wilsonii, SABINE, *Zool. App. Franklin's Exp.* p. 691. NOB. *Obs. Wils.* sp. 233. ID. *Add. Orn. U. S. in Ann. Lyc. N. Y.* II, p. 159. ID. *Suppl. Syn. in Zool. Journ. Lond.* ID. *Cat. and Syn. Birds U. S.* sp. 279. ID. *Specch. Comp.*

Phalaropus frænatus, VIEILL. *Gal. Ois.* II, p. 178, pl. 271.

Phalaropus fimbriatus, TEMM. *Pl. Col.* 370.

Lobipes fimbriatus, SELBY and JARDINE, *Orn. Ill.* 1, *Syn. sp.* 2, Adult.

Lobipes incanus, SELBY and JARD. *Orn. Ill.* 1, *Syn. Sp.* 3, *tab.* 16. Young.

Phalarope liseré, TEMM. *loc. cit.*

Phalarope bridé, VIEILL. *loc. cit.*

American Phalarope, SABINE, *loc. cit.* LATH. *Gen. Hist.* X, p. 4, sp. 2.

Philadelphia Museum, Adult. *Leadbeater's Collection*, Young.

THIS beautiful, and as regards system, so remarkable bird, was first discovered by Wilson, who, had he lived to publish the species himself, would doubtless have fixed it on the same firm basis as in other instances of the kind. But death put an end to his labours, and to the advantage which science daily realized from them, when among other important materials this Phalarope remained in his portfolio. It became the task of friendship to publish a few rough notes and unfinished sketches, the present among the rest, and a figure was thus produced impossible to be recognized except upon actual reference to the specimen itself.

The description which accompanied it was as defective as the figure, the author's pencil notes having been found partly illegible, and it was marked by him as a *Tringa*. In a second and much improved edition, which it has pleased the author to call an original work, though the plates are identical with the former, Mr. Ord's description and personal observations are very correct and ingenious, but the name and synonymes are altogether misapplied, through his mistaking it for the *Phalaropus hyperboreus*. In a paper published in the Annals of the Lyceum of New York, I availed myself of the first opportunity that offered to explain the confusion respecting the three species, and finally distinguished among them three groups which were exemplified in my Synopsis.

Mr. Sabine was not aware when he applied to this bird the name of our predecessor, that he was performing not merely an act of courtesy and respect, but one of justice also towards its first discoverer. It was only by actual inspection of the specimen examined by Wilson, and preserved in the Albany Museum, that we could identify the species, and it does not appear surprising to us that some who have not thus verified the fact for themselves should still express doubts, as Baron Cuvier has done by implication in the new edition of his *Règne Animal*. We ourselves, when we first procured the bird, had not the least suspicion that it was contained in Wilson's work. Every one will therefore be sensible of the propriety of publishing a new figure, more needed in fact in this case than if the species had been new. The description in Sabine's Appendix to Franklin's Expedition could not however be misunderstood, and Temminck and Vieillot by its perusal would have spared this bird two synonymes, as they simultaneously figured and described it in their respective works under the different names quoted in our list, though Vieillot perceived it to be the species intended by Wilson. The authors of the Illustrations of Ornithology did not recognise in

their *Lobipes incanus* the young of this, which is not much to be wondered at; but it is rather extraordinary that writers so justly scrupulous about the rights of priority should adopt, though greatly posterior, Temminck's name instead of Sabine's, thus slighting over one of the best of the few positive zoological labours of their own countrymen, and after it had been already sanctioned by strangers.

That the *Lobipes incanus* is the young of this species, which any one familiar with the changes of plumage of the Phalaropes might have suspected, will, it is hoped, be placed beyond future question by the figure we now give also of it.

If the bill only were considered, this species might with some propriety be united subgenerically with the *P. hyperboreus*, but as by its feet it differs considerably from both the other Phalaropes, which agree in this particular, we have instituted for it a peculiar subgenus under the name of *Holopodius*, which we regard as in all respects more essentially different from the old groups than they are from each other. In what respect Mr. Sabine found this species, which he so well established, intermediate between the two, we are at a loss to imagine.

In fact, in *Holopodius*, so opposite to Cuvier's *Lobipes* both in name and character, the toes have a narrow border formed by a subentire membrane; the outer connected to the first joint only; the inner almost cleft, and the hind toe long and resting on the ground: the two other groups having the toes broadly bordered with a deeply scalloped membrane and semipalmated: the hind toe is very short, the nail only touching the ground. The *Lobipes* of Cuvier differs from the *Crymophilus* of Vieillot only in the shape of the bill, stout, flattened, and carinated in the latter, slender and cylindrical in the former, as well as in ours.

Edwards first brought the Phalaropes into notice, and it was from his works that Linnæus and Brisson registered these singular

birds in their general works: the former, however, thrust them into that storehouse of species, his *Tringa*, whilst the latter established for them the genus *Phalaropus*, than which no group is more natural, and in our opinion equivalent to a family.

Latham and all modern authors have retained very properly this genus in their systems. But if they are so far unanimous, they are greatly at variance when they come to assign it a place, some referring it to one order or family and some to another. That these birds belong to the *Grallæ* or Waders, though still more aquatic in their habits even than some of the webfooted birds, does not in my opinion admit of doubt.

Before the recent discovery of the species now under consideration, *Phalaropus* contained but two real species, out of which as many had been formed as their changeable plumage exhibits phases, and what is worse, the nominal species founded on the one had been confounded with those taken from the other, and the different plumage of each taken for varieties of its relative, so that not even the two real species were accurately known apart; though so different as to form each of them the type of a peculiar group, in the same manner as we have observed is the case with the *P. wilsonii*. They are found in the north of both continents, the present being peculiar to America, which possesses them all. Cuvier, losing sight of the strong common tie that connects the Phalaropes, has separated his two groups, *Phalaropus* and *Lobipes*, and has placed the one near *Tringa* and the other near *Totanus*, on account of the analogy of the bill, regarding the *Phalaropus* as a pinnate-footed *Tringa*, and the *Lobipes* as a pinnate-footed *Totanus*. Vieillot, in adopting these groups as genera, placed them adjoining each other in a separate family, but he changed Cuvier's names into *Crymophilus* and *Phalaropus*, transposing the latter name to the other group, the *Lobipes* of Cuvier. All the three known Phalaropes as distinguished by a moderate,

slender, straight and subcylindrical bill: both mandibles are furrowed each side nearly their whole length, and the upper somewhat curved at the point; the lower is hardly shorter, quite straight, and the point subulate. The nostrils are in the furrows, basal, longitudinal, linear, half closed by a membrane. Their head is small, completely feathered, compressed and rounded above; the eyes are small, the neck well proportioned, and the body roundish. The feet are moderately long, four-toed; the naked space on the tibia rather extensive; the tarsus as long as the middle toe, moderate, robust, somewhat compressed, and scutellated; the toes are moderate and rather slender, the three anterior bordered by a festooned membrane, and the outer at least is always connected at base to the middle one; the hind toe is short, bordered only on the inside with a small entire membrane, articulated rather high and internally, touching the ground at tip: the nails are short, curved, and acute. The wings long, falciform, and acute, the first primary being the longest: the quills twenty-five in number. The tail is short, and consists of twelve feathers, with its under coverts extending quite to the tip.

The female is but little different from the male, but larger and handsomer in full plumage. The young are very different from the adults, and they vary much with age. They moult twice in the year, their colours changing strangely, which has occasioned the wanton multiplication of species. Their plumage is close, thick, abundantly furnished with down, and impermeable to water. Their colours are principally brownish and reddish, changing in winter to gray and white, which is always to be found on their under parts.

Their habits are essentially aquatic. They inhabit the sea-coasts, the shores of lakes and occasionally of rivers; are gregarious, but never collect in large flocks. Probably from being so seldom met with, they show little dread of mankind, and allow of

the nearest approach, and not being alarmed at the report of a gun, it is easy to kill several without moving from one spot. Their food consists of aquatic insects and other small animals that are found in the water. They are strictly monogamous, and are generally seen in pairs, carrying fidelity to an extreme: delighting in their peculiar element, they even copulate on the sea, and reluctantly leave it to build their nest on shore, among grasses: they lay from four to six eggs, which both sexes incubate, the male being even more strongly marked on the belly by the naked places which this causes: they share between them all the parental duties, and the young leave the nest, run about and swim as soon as they are hatched. The Phalaropes are hardly ever seen on dry ground, where, however, they walk and run swiftly, without the embarrassment of some other birds of less aquatic propensities. Though certainly the smallest of swimmers, they perform this operation with great dexterity, resisting the heaviest waves, or rising over their top, but are never known to dive: they notwithstanding swim with perfect ease, when they have all the appearance of a miniature Duck, with their head carried close to their back. While swimming they dip their bill often in the water, frequently turning round, with much elegance in all their motions. Their flight is rapid. Their flesh is oily and unpalatable.

The abode of these diminutive swimmers is the arctic and polar regions, to which their thick coat of feathers is well adapted. Hence they migrate in autumn to the temperate regions of both continents, where they are also seen in spring. They are essentially arctic birds, and breed in the most northern parts of the world, and although they retire more to the south in winter, yet their visits to our temperate climates are rare and casual. From such a combination of traits as are above related it will be evident that though much restricted in the number of species the Phalaropes are entitled to a conspicuous rank in classification.

They can only be compared with the allied genera *Himantopus* and *Recurvirostra*, and we see how materially they differ from them. They may be said to connect the *Scolopacidæ* with the *Laridæ*, forming a beautiful link between the order of Waders and that of the Web-footed birds.

Our subgenus *Holopodius*, which resembles *Lobipes* in the bill, while *Crymophilus* resembles it in the feet, is furnished with a long, very slender, smooth, flexible, and cylindrical bill, of equal breadth throughout, subulate to the tip, with the point narrow, sharp, and slightly curved: the nostrils are quite basal, and linear-elongated: the tongue is filiform and acute. The tarsi are elongated, and much compressed, in which it comes nearer to the ANSERES, and compensates for the other traits which remove it farther from them than the other Phalaropes. Thus do we find ourselves baffled in all attempts at a regularly symmetrical or mathematical arrangement, Nature acknowledges no artificial nor contracted limits. The toes are long, and by no means semi-palmated, the outer being connected to the middle only as far as the first joint, and the inner almost divided; the bordering membrane narrow and subentire; the hind toe long, and resting on the ground. The wings are long, even for the genus, and the tertials very long, reaching nearly to the tip of the primaries when the wings are closed. The tail is moderate, being neither so long as in *Crymophilus*, nor so short as that of *Lobipes*. The general form is slender, and together with the bill and other traits, gives this bird a strong resemblance to the *Totani*, a bare analogy, however, which we should not with Cuvier mistake for affinity.

The American or Wilson's Phalarope has been so well described from the recent specimen, by Mr. Ord, as not to be susceptible of improvement, and the following description is merely intended

to elucidate our figure, which represents of the natural size a beautiful female in the perfect plumage of spring. This individual was nine and a half inches long and sixteen in extent of wings. The form of the bill we have described above: it is black, and more than an inch and a quarter long, though only a line in thickness: the irides are dark brown. The upper part of the head is of a bluish delicate pale ash colour, the hind head and that part of the neck adjoining it are whitish; a white stripe passes over the eye, and beneath it is a spot of the same color: a large curving band of black includes the eye and spreads out towards the nucha, descending a good space down the neck, and gradually passes into a reddish brown, which becomes the color of the sides of the neck; this tint deepens into bright chestnut on the back part of the neck, and descends on each side, thus mingling with the plumage of the back and scapulars, which are dark ash, each feather slightly tipped with whitish: the upper tail-coverts are ash color. The throat and sides of the head to the black mark, and all beneath, including the lower tail-coverts, are pure white, somewhat tinged with rufous on the lower part of the neck beneath. The wings are five inches long, and in color dark ash, larger coverts and secondaries very slightly edged with white, under coverts white, most of the smaller wing-coverts being marked with ferruginous: the upper tail feathers are tinged with reddish at their tips, and the under marked with white on their inner webs. The feet are dark plumbeous; the claws of a dark horn color, the naked part of the tibia is nearly an inch long, the tarsus more than one inch and a quarter, and sharpish; the middle toe without the nail is scarcely one inch, and the remarkably long hind toe five sixteenths without the nail.

There are fewer variations caused in this Phalarope than in the

others by sex and season: the young however is surprisingly different for which reason we have figured it also of the full size. The bill is like that of the adult, somewhat gaping beyond the middle: the face is whitish mixed with dusky, and with a dusky stripe from the bill to the eye: the crown, neck above, back and wings are dusky brown, darker on the middle of the feathers: the rump upper tail-coverts and flanks broadly are white; the throat is pure white: the sides of the neck are tinged with rusty: the neck beneath and breast are white, slightly tinged with reddish-dusky; the belly of a purer white with a little dusky; the vent, and long lower tail-coverts, which reach to the tip of the tail, are pure white: the wings are four and three quarter inches long, the lower coverts white. The scapulars blacker, with pale rusty edges: the primaries are blackish, with pale brown shafts, of which the outer is white. The tail is broad and rounded, the middle and outer feathers somewhat longest; all of a pale dusky gray with white shafts, the exterior being also white on the best part of the inner web. All the tail-feathers are also edged with white. The feet are reddish black, the tarsus an inch and a quarter long.

We are acquainted as yet with no peculiarity of this fine Phalarope, and even the few facts registered concerning it have been obscured by the heedlessness of compilers. Though it appears to extend its migrations more to the south than its congeneric species, it is decidedly like them, (notwithstanding Temminck's supposition to the contrary) an Arctic bird, and the only remarkable circumstance about it is that it should not also be found in Europe. As far as we know it is exclusively North American, for the specimen of the young inadvertently said by the authors of the Ornithological Illustrations to have come from South America, was found in the Vera Cruz market, as appears from their

own account. As for Senegal, it was merely a gratuitous supposition on the part of Temminck, too rashly converted by the same English authors into certainty, and it therefore remains strictly North American, for which country we have, besides Wilson's and our experience, the unquestioned authorities of Vieillot and Sabine.

SCHINZ'S SANDPIPER.

TRINGA SCHINZII.

Plate XXIV. Fig. 2.

Tringa cinclus var. SAY, in *Long's Exp.* I, p. 172.*Tringa Schinzii*, BREHM, *Lehrb. Eur. Vog.* II, p. 571. NOB. *Obs. on Wils.* before sp.213. ID. *Cat. and Syn. Birds U. S.* sp. 249.*Scolopax pusilla*? GMEL. *Syst.* I, p. 663, sp. 40?*Tringa cinclus* var. *a minor*? BRISS.*Tringa alpina*? VIEILL. (not of authors.)*My collection.*

IN Mr. Say's valuable notes to Long's Expedition, he describes as follows the bird which we have had carefully represented in the annexed plate in order that naturalists may judge whether or not we are right in referring it to the new European species hitherto confounded with *Tringa alpina*, and lately separated by Brehm in his work on the birds of Europe, under the name of *Tringa Schinzii*. It is so difficult to say what is a species and what a variety in this most intricate genus, that we shall not undertake to decide from a single specimen, especially when, as in this case, it involves the identity of the bird in the two continents.

"*Pelidna cinclus* var. Above blackish brown, plumage edged with cinereous or whitish; head and neck above cinereous with dilated fuscous lines; eyebrows white; a brown line between the eye and corner of the mouth, above which the front is white; cheeks, sides of the neck and throat cinereous lineated, with blackish-brown, bill short, straight, black; chin, breast, belly,

vent, and inferior tail-coverts pure white, plumage plumbeous at base; scapulars and lesser wing-coverts margined with white; greater wing-coverts with a broad white tip; primaries surpassing the tip of the tail, blackish, slightly edged with whitish, exterior shaft white, shafts whitish on the middle of their length; rump blackish, plumage margined at tip with cinereous tinged with rufous; tail-coverts white, submargins black; tail-feathers cinereous margined with white, two middle ones slightly longer, black margined with white; legs blackish. Adult male. Length to tip of tail seven inches. Bill seven eighths of an inch."

This bird was shot in November, near Engineer Cantonment; and Mr. Say thought it was probably a variety of the very changeable *cinclus* (*Tringa alpina*) in its winter plumage. It is this very specimen that we have had represented of its full size in the annexed figure in order that naturalists may judge if we are right in the course that we have chosen. Be it as it may, we are satisfied that *Tringa schinzii* is a good species, well distinguished from *Tringa alpina* by its smaller size, and proportionally even shorter bill. The more extensively white upper tail-coverts are the best and most conspicuous mark: it is also to be observed that in the summer dress the ferruginous color of the upper part is paler, the black spot of the breast more restricted and less pure; and the neck more broadly streaked. Both sexes are moreover perfectly alike in color, which is never the case in the *alpina* in spring dress. It belongs to the subgenus *Tringa*, of which we have already treated, and it is common to both continents. In America it is found from far beyond the Mississippi to the Atlantic shores, and is rather common in autumn on the coasts of New Jersey, either in flocks by themselves, or mixing in company with other Sandpipers, with which it has every habit in common.

The specimens that we shot in New Jersey measured seven inches in length and above fourteen in extent. The bill is very nearly but not quite an inch long, compressed and black from the base: the crown, neck above, and interscapular region are of an ashy-brown, much darker in the centre of each feather and lighter on their margins; on the lower portion of their back this darker color widening, predominates, and becomes black, so that the tips of the feathers only are of the general pale ashy color; the upper tail-coverts are white, blackish along the shaft and towards the margin of the outer vane: a whitish stripe runs from the very origin of the bill over each eye; the cheeks, sides of the neck and breast are whitish streaked with ashy dusky along the shaft of the feathers, giving these parts an obscurely lineated appearance, the throat quite to the bill, and all the remaining under parts are white, the bottom of the plumage being plumbeous, and a few bands of that color appearing across the lower flank feathers. The wings are four inches and a quarter long, with the tertials and scapularies remarkably tapering and acuminate, shorter by a good inch than the two first quill-feathers: all the wing-coverts are of the color of the body, but a little darker, each having a pale gray margin, the inner great coverts have a very pure white tip: the shafts of all the quill feathers are pure white at least for a good portion near the centre: the primaries are blackish ash: the secondaries paler and margined with whitish, the tertials are again blackish edged with pale grayish: the under surface of the wing is of a silvery gray; the under wing-coverts white marbled with dusky. The tail is two and a quarter inches long: the four lateral feathers each side are very nearly equal in length, of a pale ash color margined and shafted with white: they become gradually darker as they are nearer the centre, the fifth each side is blackish ash, a trifle longer than those already described, and has a very conspicuous pure white

marginal tip on the inner web; the two middle surpass the others by a quarter of an inch, are somewhat pointed, and entirely blackish. The feet are blackish; the naked space above the heel half an inch; the tarsus seven eighths of an inch long, and much longer than the middle toe, the toes are cleft to the base; the nails are blackish. As will easily be perceived the specimen described is in the winter dress.

This Sandpiper is well known to appear in a summer vesture analogous to that of *Tringa alpina* at the same season; but we have never met with an American specimen in that state.

In the full-plumaged males the bill and feet are black: irides brown: before the eye a small blackish patch surmounted by a white stripe dotted with blackish gray. Head above, back and wing-coverts bright rufous, the feathers with merely a black centre: colors not so bright as in *Tringa alpina*: wings above blackish gray with black shafts; point of the primaries black, with white shafts: the ten middle tail-feathers as well as their upper coverts are blackish: the lateral cinereous with their coverts white: the chin is white, the sides of the head and hind neck are of a ferruginous gray: throat white, longitudinally spotted with rufous gray; the breast almost entirely of a jet-black color, always interrupted by some insulated white feathers, and never so broadly black as in *Tringa alpina*: all the remaining under parts are white, with a very few dusky streaks on the sides.

At one year of age the male is on the back of a less bright rufous spotted with black: on the breast the black consists merely of a spot, and is mixed with many white feathers. The female much resembles the male at the same age. The very young is above of a ferruginous color varied with white, yellowish, and black; all beneath white, streaked with dusky ferruginous on the throat.

SCHINZ'S SANDPIPER. 73

They frequent marshy shores, and the borders of lakes and brackish waters. They are very social even in the breeding time, and are then by no means shy: during autumn they join company even with different birds, and become very wild. Their voice resembles that of *Tringa alpina*, but is more feeble. They feed on worms, aquatic insects and similar food: build near marshes and lakes, among weeds: they lay four eggs, smaller and much less in diameter than those of *Tringa alpina*, of a yellowish-gray spotted with olive or chestnut brown.

VOL. IV.—T

PIPING PLOVER.

CHARADRIUS MELODUS.

Plate XXIV. Fig. 3.

See WILSON'S *American Ornithology, Ringed Plover, Charadrius Hiatacula*, Vol. V. p. 30, pl. 37, fig. 3, for a reduced representation of the adult in spring dress, and the history.

Charadrius melodus, ORD, in the reprint of Wilson's *Orn.* VII. p. 71, and *Gen. Ind. of the water Birds, Suppl. Orn. Wils.* (IX.) p. ccxii. NOB. *Obs. Wils. Orn.* sp. 220. ID. *Cat. and Syn. Birds U. S.* sp. 217. ID. *Specch. Comp. sp. Philad.*

Charadrius Okenii, WAGLER, *Syst. Av.* I, *Charad.* sp. 24.

Ringed Plover var. B. LATH. *Gen. Hist.* IX. p. 327. sp. 12 var. B.

Philadelphia Museum.

THE well merited elevation of this bird to the rank of a species fully vindicates our predecessor from the unjust censure of Temminck, who thought his figure of it intended for the *Charadrius hiaticula*. The same censure is repeated and aggravated by Mr. Sabine, who probably thought it intended for the *C. semipalmatus*. But if the figure is free from the supposed fault of incorrectness, its extremely diminished size, which renders it almost useless, requires that the bird should now appear in this work in its full dimensions.

Not only is the true *C. hiaticula* of Europe not found on the American continent, but the birds hitherto mistaken for it constitute two very distinct and exclusively American species, notwithstanding the awkward quotations in the new edition of Cuvier's *Règne Animal*, which, in this instance, as in several others, is as far behind its age as the former was in advance of it.

Although the never too much lamented Wilson gave, in his fifth volume, the present bird as a variety of which he intended figuring the type in a future part of his work, when he came to it in his seventh volume, he clearly and positively pointed out the difference in markings, habits, migrations, and voice, between the two which he then considered as distinct species: he thus in reality established the species, and indeed so well, that we cannot do better than refer to his conclusive reasonings. The only essential point he omitted was to impose a name on his species, which he undoubtedly would have done had he lived to publish himself the index to the water birds, as, in some instances, he supplied similar deficiencies for the land birds. Mr. Ord has, however, filled this void by calling the bird *C. melodus*, which appropriate name we feel bound to adopt; and the more so, as Mr. Ord informs us that it would have been Wilson's own choice. Almost simultaneously with our endeavours in this country for permanently fixing the species, Dr. Wagler in Europe, on his part, was also giving it a name, so that it is now furnished with two.

In the circumstance of its inner toe being cleft to the base, this bird approaches more closely to *C. hiaticula* of Europe, than to *C. semipalmatus*; but in colours it differs greatly from these so similar species, and the membrane that connects the outer toe is considerably smaller than in any. The synonyms of Wilson do not of course apply to this new species; and what is worse, though this is common to all writers upon the Ring-Plover, they do not belong to one and the same species.

Although, without doubt, related to the *Tringæ*, which are *Scolopacidæ*, the Plovers belong to another family, that of the *Pressirostres* of Cuvier—which may be called *Charadridæ*—and through *Otis* and *Œdicnemus* these Waders are connected somewhat with the Gallinaceous birds. This natural family of ours,

very different from the artificial one formed by so many authors for the three-toed Waders indiscriminately, and adopted under the name *Charadriadæ* by the new English school, though professing to adhere to a natural arrangement—is well distinguished by its short (or moderately so) rather robust bill, the hind toe wanting, or when present, very short. It is composed of but eight genera, of which only three are found in North America, two aberrant, and the present, the only typical American, which is well distinguished by its bill, very short rounded, obtuse, and somewhat turgid at tip. In order to exemplify how different from that of authors is this family, as we understand it, we may remark that the birds forming it are scattered by Illiger through his *Campestres*, *Littorales*, and *Limicolæ*; by Cuvier and Latreille divided between their *Longirostres* and *Pressirostres*; by Vieillot placed in *Pedionomi*, *Ægialites*, *Helionomi*; in *Tachidromi* and *Limose* by Ranzani and Savi; in *Charadriadæ* and *Scolopacidæ* by Vigors, &c.

Our genus *Charadrius* has different limits from those of perhaps any recent or former author, being more extensive than in many, but more contracted than that of Wagler, which comprehends all our typical *Charadridæ*. Linné, who made it a sort of receptacle for nearly all three-toed Waders, has placed in *Tringa* some of our Plovers that are furnished with a rudiment of hind toe, and the same has been done by Gmelin, Latham, Illiger, and even, though to a less extent, by Cuvier. As long since restricted by the separation of *Himantopus* and *Calidris*, which are not of the same family, and of *Œdicnemus*, which truly is, it is much more natural; especially if with Wilson we unite with it, as nature dictates, those species that happen to possess the rudiment of a fourth toe. Among the earlier writers Brisson was the first who assigned more natural limits to the genus which he called *Pluviatis*, and his two well enough composed genera, *Pluvialis* and *Vanellus*, include all our Plovers. Cuvier, Temminck, Vieillot, and Ranzani place

the four-toed Plovers with the Lapwings, *Vanellus*. Savi more recently has evinced his good judgment by separating them at least from *Vanellus*, if he does not unite them with *Charadrius*, which his professedly artificial system did not allow.

I distinguish two subgenera in my extensive genus *Charadrius*, regarding *Squatarola* of Cuvier and Savi as no more than a section of my first subgenus, of so little importance do I consider the anomaly of the hind toe, the sole characteristic of that artificial group. These subgenera are: 1. *Pluvialis*, for the large mottled species without a collar, and with variegated plumage. Such are amongst the three-toed the European and Asiatic *C. pluvialis* and *morinellus*, and the American *virginicus* (or *marmoratus*); and among the four-toed the Europeo-Asiatic bird *C. gregarius*, and the cosmopolite *C. helveticus*. 2. *Ægialitis*, Boie, or the Ring-Plovers, which have a broad white collar around the neck. This is the more numerous in species, and the present belongs to it: it may form two sections, one for the semipalmated Ring-Plovers, whose toes are all connected at base by a membrane, and the other for this and the remaining Ring-Plovers, in which the inner toe is separated down to the base. As for the armed or spur-winged Plovers, as well as the wattled species, all I have examined were perfectly similar to the armed and wattled Lapwing, and they constitute in my arrangement a very natural subgenus under the name of *Hoplopterus*, which group, like *Pluvialis*, may be sectioned into those with three and those with four toes. This group of *Hoplopterus*, both by its tarsus and wings, takes place under my genus *Vanellus*, and differs subgenerically from the typical species merely by its longer legs, and hind toe less developed, or often wanting. *Pluvianus*, Vieillot, distinguished by a stouter bill, I never have examined, but have no doubt that it will find its place in my genus *Vanellus*, where it may be united to my three-toed *Hoplopteri*, or possibly become a subgenus by itself.

Both the three-toed and four-toed species that form my subgenus *Charadrius*, and are so easily known by their greater size and want of a collar, live in large damp meadows, or open and muddy champaign countries. They hardly ever alight on the beach, or even accidentally on river shores. During the nuptial season the males assume a brighter vesture. They do not breed in the temperate climates of Europe or North America, but only show themselves there in autumn and winter. Their flesh is exquisite food.

The Ring-Plovers on the contrary are shore birds in their habits, and may be known by their diminutive size and broad white collar. They frequent invariably the banks of rivers and sandy sea beaches, and it is by accident if they are seen at a distance from their favourite element. Their plumage does not undergo extreme changes, and merely from darker to lighter. Several species breed in our climates, and their flesh is hardly esculent. Although not marked by any striking physical character, we regard the extensive group *Ægialitis* as a very natural one: it has numerous species in every part of our globe. The three European are modelled precisely after the same type as the present species, while the three other North American have each a strong distinctive character peculiar to itself: in the Semipalmated it is the webbed toes, in the Wilson's the powerful and acute bill, and in the Kildeer its large stature and oddly coloured wedge-shaped tail.

In all our Plovers the bill is shorter than the head, rather slender, straight, cylindrical, depressed at base, obtuse and somewhat turgid at tip: the upper mandible is longitudinally furrowed two-thirds of its length, the lower is shorter: a remarkable character consists in the small opening of the bill, which is hardly cleft beyond the origin of the feathers. This peculiarity affords an excellent means of distinguishing them from the

Ædicnemi, in which the gape extends to beneath the eye. The nostrils are basal, lateral, placed in the furrow, and covered by a membrane, leaving only a narrow longitudinal opening: the tongue is entire, obtusely lanceolate, channelled somewhat above, convex beneath. The head is large in proportion to the body, and the eyes large even for the head: the forehead is prominent and the face wholly feathered. The feet are either three or four-toed, with the hind toe exceedingly small and raised from the ground: the naked part of the tibia is moderate; the tarsi are longer than the middle toe and *reticulated*; the toes scutellate, margined by a narrow squamulose membrane: the middle toe is longest and connected to the outer, at least to the first joint, by a membrane: even in the species that have the inner toe cleft there are traces of the membrane, which is so much developed in the Semipalmated Ring-Plover: the nails are compressed, curved, and acute. The wings are elongated, acute, and tuberculate: the first primary is longest, and after the second they decrease rapidly, thus presenting a most useful mark for discriminating between this and the kindred genus *Vanellus*, which has obtuse wings, the third primary being the longest, and the others decreasing gradually. The tail is more or less rounded, always composed of twelve feathers, rounded or lanceolate. The plumage of the under parts is soft, the feathers being numerous, wide, rather dense in the centre, with the barbs rather loose, and well furnished with down at base: the plumage of the upper parts is rather dense, and the feathers more or less rounded at the tips: the scapularies are long, at the tips attenuated and very flexible. In most of the species the males and females are alike, the young somewhat different from them. They moult generally twice in the year, when the colours of their plumage undergo some changes.

The Plovers are all more or less gregarious in disposition: their haunts are either meadows, as the mottled Plovers, or the sea-

shores, like the Ring-Plovers: they have a very remarkable habit of stirring the soil with their feet, to put in motion worms and aquatic insects, their exclusive food. They are more nocturnal than diurnal. They lay in the sand about four large eggs. The young very soon after they are hatched follow the mother, and pick up the food which she with great care points out to them.

The Piping Plover is seven inches long, and fourteen in extent: the bill is bright yellow slightly tinged with orange for half its length, thence black: the eyelids are bright yellow and the irides dark brown. The plumage above generally, with the mere interruption of the ring on the neck, is of an extremely pale brownish or dusky, inclining strongly to whitish ash: the front, part of the head between the bill and eyes, and the whole inferior surface from the chin to the tip of the lower tail-coverts, and including the under wing-coverts and long axillary feathers is pure white: the head and breast are ornamented, the former with a black crescent, that runs transversely between the eyes and bounds the white forehead on one side, and the ash-coloured parts of the head on the other; the latter by a curved band round its sides, forming the ring or half-collar round the neck, but narrow and almost interrupted before. The wings are four and three quarter inches long, and reach when closed to the tip of the tail; the wing-coverts are darker than the back feathers, and are all edged with white: the larger coverts are broadly terminated with white, constituting the band across the wings: the quill-feathers are dusky; the secondaries are broadly white inside with margins of the same: the primaries are blackish at the point, shafted and obliquely centred with white; the four outer ones are blackish on their outer margins where the others are white. The tail is two and a half inches in length, nearly square at tip, being much less rounded than in the Semipalmated species, white beneath for half its length, and blackish at tip; the outer tail-feather is wholly

white, the next is also white, and with a single spot of black, which on the third extends much more, and still more on the fourth, and fifth, till the last is merely terminated with white, the middle ones being wholly dusky from the white of the base. The feet are greenish yellow tinged with orange, and the nails black.

Those authors who describe the autumnal plumage as much darker, are still labouring under the erroneous opinion which they had rejected, of this being the same with the *C. semipalmatus*. On the contrary, it is if anything still paler at that season, and considerably resembles that of the young birds, which are distinguished by the absence of the neck ring and sincipital crescent, and the bill being entirely blackish.

As will appear by referring to Wilson's two articles on the Ring Plovers, this species is commonly met with during the whole summer along the sandy coasts of the United States, on the approach of winter retiring south: it lays in the month of July on the sandy beach, three or four eggs, very large for the bird, of an obscure clay colour, all sprinkled with numerous reddish spots. It runs rapidly, holding the wings half expanded; and utters a very soft and mellow cry.

HYPERBOREAN PHALAROPE.

PHALAROPUS HYPERBOREUS.

Plate XXV. Fig. 2.

- Tringa hyperborea*, LINN. *Syst.* I, p. 249, sp. 9. GMEL. *Syst.* I, p. 675, sp. 9. RETZ, *Faun. Suec.* p. 183, sp. 152. MULL. *Prod. Zool. Dan.* sp. 196.
- Tringa lobata*, LINN. *Syst.* I, p. 249, sp. 8. ID. *Faun. Suec.* p. 64, sp. 179. RETZ, *Faun. Suec.* 152, Young. MULL. *Prod. Zool. Dan.* p. 195. FABR. *Faun. Græc.* p. 109, sp. 75, Adult and Young and history. BRUNN. *Orn. Bor.* p. 51, sp. 171, Young. (N. B. Not of Gmel. who under this name had in view the *Ph. fulicarius*, though he unaccountably retained the Linnean phrase.)
- Tringa fusca*, GMEL. *Syst.* I, p. 675, sp. 33, Young.
- Phalaropus hyperboreus*, LATH. *Ind. Orn.* II, p. 775, sp. 1. MULLER, sp. 196. *Trans. Linn. Soc. Memoir birds of Greenland*, XII, p. 535. TEMM. *Man. Orn.* 1st ed. p. 457. ID. *Man. Orn.* 2d ed. II, p. 709. SABINE, *App. Franklin's Exp.* p. 690. NOB. *Add. Orn. U. S. in Ann. Lyc. N. Y.* II, p. 159. ID. *Cat. Syn. birds U. S.* sp. 279. ID. *Specch. Comp.*
- Phalaropus fuscus*, BRISS. *Orn.* VI, p. 15, sp. 3. ID. *Svo.* II, p. 363. LATH. *Ind. Orn.* II, p. 776, sp. 4. Linn. *Trans.* XII, p. 535, Young.
- Phalaropus cinereus*, BRISS. *Orn.* VI, p. 15, sp. 2. ID. *Svo.* II, p. 362, Adult. NILSS. *Orn. Suec.* II, p. 120, sp. 193. MEYER & WOLF, *Tasch. loc. cit.* BREHM, *Lehrb. Eur. Vog.* II, p. 665. ROUX, *Orn. Provenc.* pl. 337, adult Male.
- Phalaropus Williamsii*, HAWORTH, Linn. *Trans.* VIII, p. 264.
- Lobipes hyperboreus*, SELBY & JARDINE, *Orn. Ill.* I, *Synops.* sp. 1.
- Larus fidipes alter nostras*, RAY, *Syn. Av.* p. 132, A. 7. WILL. p. 270.
- Tringa fusca rostro tenui*, KLEIN, *Av.* p. 151, sp. 3.
- Falaropo iperboreo*, RANZ. *Elem. Zool.* III, pt. VIII, p. 283, sp. 1.
- Le Coq d'Odin*, Anon. *Icon. Rer. Nat.* II, p. 8, pl. 20, Adult.
- Phalarope cendré*, BUFF. *Ois.* [VIII, p. 224. ID. ed. 1784, IX, p. 124. *German Translation* by OTTO, XXX, p. 111, cum figura. ROUX, *tab. cit.*
- Phalarope de Sibérie*, BUFF. pl. enl. 766, Male.
- Phalarope hyperboré*, TEMM. *loc. cit.* VIEILL. *Orn. Franc.* pl. 278, fig. a, summer dress, fig. b, winter.



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- Lobipède à hausse-col*, CUV. *Règn. Anim.* I, p. 532.
Cock coot-footed Tringa, EDW. *Glean.* pl. 143, adult Female.
Coot-footed Tringa, EDW. *Glean.* pl. 46, Young.
Jonston's small cloven-footed Gull, WILL. *Engl.* p. 355, ♀ VII.
Red Phalarope, LATH. *Syn.* V, p. 70, sp. 1. *Ubersetz, (translation)* V, p. 289, sp. 1, tab. 94, Male. *Id. Gen. Hist.* X, p. 1, sp. 1, and var. A and B, (pl. 163.) (N. B. Var. C is *P. fulicarius*, taken from Wilson's work.) PENN. *Brit. Zool.* II, p. 219, pl. 76. *Id. ed.* 1812, II, p. 125, pl. 21. *Arct. Zool.* II, p. 494. BEWICK, II, p. 139. LEWIN, V, pl. 193. WALCK. II, pl. 127. MONT. *Orn. Dict. Suppl. and App.*
Brown Phalarope, LATH. *Syn.* V, p. 274, sp. 4. PENN. *Arct. Zool.* II, sp. 214, young.
Red-necked Phalarope, BEWICK, *Brit. birds*, II, p. 149.
Seeschnepfe, CRANTZ, *Hist. Grænl.* p. 113.
Der Wasserstretter, SCHMID. *Vog.* p. 128, tab. 111.
Aschgrauer Wasserstretter, BECHST. *Nat. Deutschl.* IV, p. 372. MEYER & WOLF, *Tasch.* II, p. 417.
Rothalrige Wasserstretter, WOLF & MEYER, *Vog. Deutschl.* I, *Heft.* 15, fig. 1, adult Male, fig. 2, young Female, fig. 3, young Male. SELIGMANN'S *Voy.* V, tab. 38.
Gemeine Wasserstretter, BECHST. *Nat. Deutschl.* II, p. 317. MEYER, *Vog. Deutschl.* I, *Heft.* 15, fig. 2 and 3, Young at different ages. NAUM. *Vog. Nachts.* II, p. 80, fig. 24, Young.
Fisklita, *Act. Nidr.* III, p. 575. *Bam.* II, p. 407.
Norduest fugl, BOM. *Nat. Hist.* V, p. 599.
Nuorte-ladde, v. BIEGGUSH, *Lieur. Finmark*, p. 290.

My collection, Adult and Young.

By giving a representation of this Phalarope, besides that we add a species to the American Ornithology, we make good our promise of settling an important question. A glance at our figure of the Hyperborean Phalarope, here brought into comparison with the young Wilson's Phalarope, will at once evince the incorrectness of Mr. Ord's refined distinctions, and ultimate decision that they were the same bird. This comparison shows more conclusively than any argument to be found in our respective writings on this subject, what are the real facts. We have previously observed, when illustrating the former species, that

they even differ subgenerically, and that this one alone ought to form the genus *Lobipes* of Cuvier.

The *Lobipes* of Cuvier, since called by the recent English writers Lobefoot, and on which Vieillot imposed the name of *Phalaropus*, is formed in our opinion of this single species, notwithstanding that Cuvier and some English authors include the *P. wilsonii* in it on account of its bill being similar. But the feet are too different to allow of such a reunion, being in this one precisely similar to those of the flat-billed species.

The bill of the Lobefoot is moderate in length, slender, smooth, cylindrical throughout, and a little stoutish at base, subulate to the tip, with the point narrow and sharp: the upper mandible curves slightly upon the lower at tip, where they do not quite meet, as occurs in some *Totani*: the nostrils are not quite basal, as in the *Holopodius*, and are linear instead of the subovate form of the *Crymophilus*, or true Phalarope: the tongue is also filiform and acute, and by no means broad, fleshy, and obtuse, as in the same group. The tarsi are however longer than in this, though shorter and less compressed than in the *Holopodius*: the toes are likewise intermediate as to length between the two other groups: the middle one is connected with the inner to the first joint, and with the outer to the second; the edging membrane is broad, deeply scalloped, and finely pectinated: the hind toe is very short, only the nail touching the ground. The wings are more elongated than in *Crymophilus*: the tail on the contrary is shorter, and the general form slender, in which respect, and some others also, they bear a resemblance to *Totanus*.

The Hyperborean Lobefoot, as represented in its summer, though not its perfect plumage, is seven and a half inches long, and fourteen and a quarter in extent. The bill is less than an inch long, black, exceedingly slender, and with both mandibles remarkably acute, the upper being rather longer and somewhat

inflected at tip. The irides are brown. The head, neck above, back, and wing-coverts, are very dark gray, which comes forward and round on the lower part of the neck, thus encircling the white throat: through the eye from the bill passes a broad dusky stripe to the hind head; a rufous line arises behind the eye, which dilates into a large patch on each side of the neck, the two nearly joining at the back part: the sides of the neck and throat are white, the eyelids white; the back and scapulars are of a darker colour than the adjoining parts, with large spots of ferruginous on the upper part of the back, occupying the outer side of the feathers: the rump and upper tail-coverts are banded dusky and white. The sides of the breast are dark cinereous, all the remaining lower parts are white, the base of the plumage being blackish ash, which rather predominates on the flanks, giving to these parts a very dark mixed appearance. The wings are four and a quarter inches long, and when closed reach precisely to the tip of the tail; the under wing-coverts are varied with white and blackish ash; the lesser and middle upper coverts are dark blackish gray, the latter with a few white streaks at the tip of the outer one: the greater are almost blackish, and broadly pure white at the tips, which makes a conspicuous band of pure white across the wings: the primaries are blackish, slightly edged with paler, and with whitish shafts; the secondaries are white at their base, and on the margin of their blackish tips, some of them being also white on their inner web, so that the white much predominates: the tertials are very long and wholly blackish. The tail is little more than two inches long; the feathers are blackish gray, edged with pale ferruginous at tip. The feet are of a greenish lead; the naked space on the tibia nearly half an inch; the tarsus little more than three quarters of an inch, and precisely of the same length with the middle toe; the hind toe no more than three sixteenths of an inch.

In old and perfect specimens, especially old females, this sex

being larger and much handsomer, the back, scapulars, and wing-coverts are of a very intense shining black, the anterior part of the back and scapulars being skirted with fulvous, and the wing-coverts edged near the tip with pure white; the sides and also the inferior portion of the neck are of a bright rufous: the two middle tail-feathers are of the same deep black as the back, and the lateral ashy ones are edged with white. It will be remarked that the chief difference between the specimen figured and the quite perfect state resides in the ferruginous colouring of the sides of the neck, which does not meet on the breast, as it does quite broadly in adult birds: considerable variation takes place in this respect, which is entirely owing to the more or less advanced maturity of the bird.

The young before the summer moult are well distinguished by having the forehead, cheeks, throat, sides of the neck and neck beneath pure white, as well as all the under parts, the neck and flanks being the only parts tinged with cinereous: a slight yellowish tinge appears on the sides of the neck: the top of the head only, a band along the nucha, and a patch around the eyes are blackish-gray slightly skirted with rufous: the back and scapulars blackish, each feather broadly skirted with bright ferruginous: the wing-coverts blackish, lesser margined with white; greater white at the tip: the inner part of the tarsus is yellow; the exterior and the toes of a yellowish green.

During summer this bird resorts to lakes and fresh waters, though preferring at all times brackish water: in winter they betake themselves to the sea, and are even met with at great distances from land, floating among icebergs in the desolate seas of the north: they swim still better than the other Phalaropes, and are met with farther at sea. This species is mostly seen in pairs, though sometimes in small flocks, and busily engaged in dipping their bill into the water after the minute and almost

invisible animals of the ocean. They are also much on the wing, somewhat like the Gulls and Terns, and their cry resembles that of the Greater Tern.

Although the Hyperborean Phalarope is a very rare visitant in the United States, there being a few instances only of its being shot in Boston Bay and on Long Island, it breeds regularly at Hudson's Bay; arriving there annually in the beginning of June. In the middle of this month they lay three or four eggs on a dry spot among the grass: the nest is placed on a small hillock near a pond, and contains four very small pyriform eggs, resembling those of a Snipe in shape, but much less, and of a deep olive colour, blotched with dusky, so thickly as nearly to obscure the ground colour. The young fly in August, and they all depart in September for less rigorous climes. In Greenland the species also arrives regularly in April and departs in September. This bird inhabits the Orkney and Shetland islands, as well as those of the Norwegian sea, in considerable numbers during summer, breeding there. It is very common in the marshes of Sanda and Westra, but especially Landa and North Ronaldsha, the two most northerly of the Orkney Isles, in the breeding season, but leaves them in autumn for milder regions. Its favourite abode is the shores of lakes situated within the Arctic circle: it is plentiful in the northern parts of Sweden, Russia, and Norway, as well as the northern coasts of Siberia, and between Asia and America, extending its irregular wanderings even to the Caspian Sea. In Iceland it is observed to come about the middle of May, and remain in flocks at sea ten miles from the shore, retiring early in June to mountain ponds: remarkably faithful to each other, both sexes are quarrelsome with strangers, and the males are very pugnacious, fighting together running to and fro on the surface of the water while the females are sitting. The species passes regularly along the north coasts of Scotland and the continental

coasts of the Baltic Sea. It appears also, though rarely, during spring and autumn in the southern Scandinavian provinces. In England it is very rare, and quite as accidental as in the United States, though it has been casually observed in Germany, France, and even on the great lakes of Switzerland: an individual was killed on the lake of Geneva in August, 1806, the only one ever seen on that lake, where the flat-billed Phalarope is by no means so excessively rare: the specimen alluded to was killed while swimming and picking up small diptera from the surface of the water. These wanderers are always young birds; but never within my knowledge has an individual been known to stray into any part of Italy. The favourite food of this species is water insects, especially diptera, that abound at the mouths of rivers. The old ones hover round their young when exposed to any imminent danger, repeating *prip, prip*, and at the commencement of August carry them out to sea, at the end of that month being no longer to be found inland. The Greenlanders kill them with their arrows, and eat the flesh, which being oily, suits their taste: they also keep the very soft skin, making use of it to rub their eyes with, and thinking it efficacious in curing a species of ophthalmia to which they are subject.

Although the specific name of *lobata* was given first by Linné to the present species before he bestowed upon it the additional one of *hyperborea*, we have thought it proper to retain the latter, which is also Linnean, because that of *lobata* has been successively applied to each of the three species, and by Latham exclusively appropriated to another, whilst the present has never been so misapplied, and is long since unanimously consecrated to this species. By adopting the prior name of *lobata*, we should have been compelled to quote our own authority, and say *Ph. lobatus*, NOB., since *Ph. lobatus*, LATH. is the *Ph. fulicarius*, and *Ph. lobatus*, ORD, the *Ph. Wilsonii*.

LONG-LEGGED SANDPIPER.

TRINGA HIMANTOPUS.

Plate XXV. Fig. 3.

Tringa himantopus, Nov. in *Ann. Lyc. New York*, II, p. 157. Id. *Cat. and Syn. birds U. S.* sp. 245. Id. *Specch. comp. sp. Philad.*

My collection.

THE figure of this remarkable bird cannot fail to create a sensation among naturalists, and a careful examination may induce them to attach more importance to our subgenus *Hemipalama* than Baron Cuvier has done, and to admit that it is quite as distinct as his *Machetes*. That this has not already been done is no doubt because the real type, which is this species, was so little known. The *Tringa semipalmata* of Wilson, which we have united with it merely on account of its semipalmated toe, has no real affinity with it, but is similar to the other Sandpipers, and we should never have thought of instituting a separate group for it alone, more than for the *Charadrius semipalmatus*.

The Long-legged Sandpiper is in fact one of those beings that although intimately connected with several groups, with which they have many things in common, yet possess peculiarities sufficient to insulate them completely from all that surround them. It is very remarkable for its anomalous characters. Though decidedly a *Tringa*, it connects, still more evidently than the other species with long subarched bills, that have been placed in *Numenius* by German authors, this latter genus with its own, since to the other common traits of resemblance it unites the semipalmated toes; so that in fact instead of placing it at the head of the *Tringæ*, it should rather be arranged last of the

Numenii, were this not forbidden by the long and delicate legs and toes, as well as some other peculiarities easier to perceive than to express by words. As a species, in form, dimensions, and especially in plumage, this bird greatly resembles *Tringa subarquata* of Temminck, (*Numenius africanus*, Lath.) from which it is however clearly distinguished by its still longer and semipalmated feet, in which latter only it resembles *T. semipalmata*. It cannot for a moment be mistaken for any other *Tringa*, differing widely from all, and by a complication of anomalies resembling more in general garb and plumage a *Totanus* than a *Tringa*.

We are unable to say much of the habits of this curious Sandpiper, further than that we met with it in the month of July, 1826, near a small freshwater pond at Long Branch. Being there in company with my friend Mr. Cooper, we observed a flock flying about, at which I fired, and killed the one here represented. On first picking it up, I mistook it for a time for *T. subarquata*, a species very rare in the United States, though one of the most common in Italy, but was undeceived upon observing the web between the toes. This is the only specimen I have ever seen, though the gentleman just mentioned informs me that he has recently procured another that was shot in the month of May on the south shore of Long Island.

This new species is nearly nine and a half inches long. The bill, much longer than the head, is decidedly subarched, and measures one inch and five eighths, and is black. The general plumage is of the same gray colour usual in other Sandpipers: the crown is dusky, mixed with whitish and blackish, and with a little bright rusty on the margins; a broad whitish line is above the eye; between the bill and eye dusky, a patch of rust-colour on the auriculars: the neck above and on the sides is mixed with whitish; the back and scapulars black, the feathers tipped with dusky gray and marked with pale rusty: the rump is plain dusky gray,

and the upper tail-coverts white, regularly banded with black. The throat is whitish, obsoletely dotted with blackish; the whole under surface is then, including the tail-coverts, white, each feather being banded with blackish, and one of the bands terminal. The wings are five and a half inches long; all the coverts plain dusky with lighter margins; the under coverts are marbled with blackish and whitish: the primaries are blackish, the first with a white shaft; the secondaries are pale dusky, edged with whitish. The tail is gray, even, and two inches long, the two middle feathers are acute, projecting beyond the others the length of their points; the outer on each side is also somewhat longer than the others: all are pale dusky with white shafts, the white spreading somewhat along the middle, but particularly at the base, where all the feathers but the middle ones are white, as well as the two outer also on the greater part of their inner vane. The feet are black, and the legs very long: the naked space on the tibia one inch and a quarter: the tarsus one and three quarters long: the middle toe is very nearly one inch without the nail, and about as much over an inch including it: all the front toes are half-webbed, that is with a membrane connecting them at base.

YOUNG SEMIPALMATED PLOVER.

CHARADRIUS SEMIPALMATUS.

Plate XXV. Fig. 4.

See WILSON'S *American Ornithology*, *Ring-Plover*, *Charadrius* (*Tringa*, by a typographical error,) *Hiaticula*, vol. VII, p. 65, (ORD'S *ed.* p. 69,) pl. 59, fig. 3, for the Adult in spring dress, and the history.

Charadrius semipalmatus, NOB. *Obs. Nom. Wils.* sp. 219. ID. *Cat. and Syn. birds U. S.* sp. 216. ID. *Speech. comp. sp. Philad.* CAUP, *Isis*, XII, 1825, p. 1375, t. 14, (the head and foot.) WAGLER, *Syst. Av.* I, *Charadrius*, sp. 23.

Philadelphia Museum.

THE credit of first pointing out the curious though obscure character which distinguishes the present bird from its very near relative the *Ch. hiaticula* of Europe, is due to Mr. Ord, and after verifying it in all our American specimens, we feel satisfied that the true *hiaticula* does not inhabit this continent, and those authors who have recorded it as American, must have mistaken the present species for it: we might therefore have swelled our limited list of synonyms with quotations of all their American specimens described under this name. The species was first established in our "Observations on the Nomenclature of Wilson," and in our "Synopsis," and nearly at the same time by Mr. Caup also, on a single specimen in the Museum of Darmstadt, whose origin was doubtful, but the real one suspected. By a fortunate coincidence, Mr. Caup and myself were led to select the same appropriate name for our bird, which is the less extraordinary, as being suggested by so material an anomaly in the characters; Natural History conducting us in this instance to the result of one of the most exact sciences.

The distinctions between the three European species of Ring-Plovers having been until lately but little understood, it is not to be wondered at if those inhabiting these States were not at once well established: North America counts also three, independently of the Kildeer, and several others not yet properly determined inhabit other parts of the world.

Being now regarded as a new and very distinct species, we have not hesitated to reproduce of its natural size a bird that Wilson has already represented reduced one half; but his figure of the adult being remarkably good, we have thought it best to give the young, with the subjoined description, referring the reader for other particulars to the accurate account of our predecessor.

The Young Semipalmated Plover is seven inches long, and fourteen in extent: the bill is almost entirely black, being destitute of orange, and with no more than a little dirty yellowish flesh-colour at the base of the under mandible. The frontlet, continued into the lora, and dilating broadly on the auriculars, is of a darkish gray colour, somewhat tinged with brown: a frontal band obscurely continued over the eyes is white; there is no sincipital black band: the top of the head is grayish brown down to the neck, which colour unites and forms a single mass with the auriculars already described: the throat to the very origin of the bill, and all the under parts, are pure white, with the exception of a collar on the breast, which, as a continuation of the colour of the back, is of a brownish gray: the white encroaches somewhat upon the middle of this collar on the lower side; and extends in a broad ring all round the neck: after this collar, the whole upper parts of the body are brownish gray, precisely of the same hue as the top of the head, and like it have each feather slightly edged with pale. The wings are four and three quarter inches long, exactly reaching the tip of the tail, the smaller and middle coverts

and tertials are of the colour of the body ; the larger are darker, white at the tips, and they form a conspicuous band across ; the spurious wing and under wing-coverts are white, somewhat mixed with dingy : the quill-feathers are dark gray, blackish at their point, and on their outer web : the shaft of all is white towards the middle, and the secondaries have moreover a white spot along it. The tail is two and a half inches long, slightly rounded : the outer and shortest feather is white, with a small elongated spot towards the middle of its inner web ; the second each side has a much broader and darker one extending on both webs, dingy at base and pure white on the shaft and at tip only : all the remaining ones are dusky at base, with a broad black space towards the point, and are terminated with white, less pure and less extended according as they are nearer to the true middle ones, which are merely edged with whitish. The feet are yellowish ; the tarsus is almost an inch long, and the middle toe three quarters ; the outer is connected to the second joint with the middle one by a membrane ; and the inner is also connected with the middle, but no farther than the first joint.

In the adult, well described by Wilson, the bill is orange beyond the middle, black at the point : the margins of the eyelids are orange : the irides are brown : the front, throat, neck broadly round, and all beneath pure white : the head is of a gray colour, somewhat tinged with reddish : a broad sincipital band, and a broad ring round the base of the neck jet black : lora, continued through the eye into a broad patch dilating on the auriculars, blackish : the back and wing-coverts are rufo-cinereous : the quills are blackish, the fifth, sixth, seventh and eighth being white along the shaft : the secondaries are rufo-cinereous, white at their tips : the tail is blackish, and quite black towards the point ; the outer tail-feather is white, the second, third and fourth being also white at their tips.

In size, this species comes nearest *Charadrius curonicus* (*minor*) of Europe, but in colour and all else most resembles *C. hiaticula*.

On the coasts of New Jersey, this species arrives late in April, keeping then in flocks, and until late in May, when they depart in search of more northern climes. No instance is known of their breeding in the United States, but their flocks reappear periodically in September, protracting their stay till the last of October. They run with rapidity, uttering a rather hissing short note, resembling the syllable *thyk, thyk*. It is a remarkable fact that these closely related species of Ring-Plovers, hardly cognizable at a distance by the eye, are at once detected by a practised ear, their note being so very different. For who could mistake the hissing voice of the present for the soft and musical tones of the Piping species, so happily compared by Wilson to a German flute. It is equally well known that the species of Europe differ also in this respect from each other, the true *hiaticula* having very nearly the same hissing voice as the Semipalmated, whilst the *curonicus* has a very melancholy cry, resembling *Kirw! Kirw!*

PEALE'S EGRET HERON.

ARDEA PEALII.

Plate XXVI. Fig. 1.

Ardea Pealii, NOB. in *Ann. Lyc. New York*, II, p. 155. ID. *Cat. birds U. S. in Contr. Maccl. Lyc.* ID. *Syn. birds U. S.*

My collection.

AMONG the numerous and still badly known tribes of Herons—a genus which even as reduced according to the sounder views of modern authors, yet consists of about fifty species, spread pretty nearly in equal numbers over all parts of the world—a small group has been distinguished in common language before it was recognised by naturalists, under the name of Egret, and it may be admitted into the system as a secondary division of the subgenus *Ardea*, as this is distinguished from *Botaurus*, *Nycticorax*, &c. Their elegance of shape, long and slender bill, but especially their snowy whiteness, and the flowing train of plumes by which they are adorned in the perfect state, make them easily cognizable even at a distance, and seem fully to entitle them to such a distinction. But this very similarity, as one may well imagine, renders the several species, for there are several of them, liable to be easily confounded together. Besides their remarkable similarity of form, colours are wanting to discriminate them; and we are reduced to those exhibited by the bills, lora and feet, to the proportions of the bird and its respective members, and to the nature of the plumage of the crest and trains that ornament the adults. The privation of these ornaments in the young, and in the adults also when moulting, increases the difficulty, and has



Swan & great Heron.

Spizella monticola.

Spizella monticola.



caused them to be taken until lately for distinct species: fortunately this source of confusion has been removed; and the females have been ascertained to be similar to their males. The species of Europe and Northern Asia were therefore upon good grounds reduced to two, the Great and the Small, *A. alba* and *A. Garzetta*; but both formerly, and one even till now, were confounded with their two American analogues described by Wilson. In my "Observations on the Nomenclature" of that author, as well as my subsequent writings, without excepting my Synopsis, I admitted the two North American species, and added as a third, the bird now represented in our plate, but I also erred in considering the large American species as the same with the large European: they are in fact no less distinct from each other, however closely related, than *Ardea candidissima* and *A. Garzetta*. The name of *alba* belongs to the European, and that of *egretta* to the American; although Illiger, Lichtenstein, (and Temminck?) not perceiving that it was the legitimate *egretta* of Gmelin and Latham, and having applied that name to the European *alba*, have given the American the new one of *A. leuce*.

Mr. Ord, in the second edition of Wilson's Ornithology, was therefore right in doubting the identity of the two species, and I was mistaken when I declared his doubts unfounded: but he ought not to have quoted as synonymous *A. egretta* of Temminck, &c. Indeed, I am unacquainted with a single instance in which upon due examination the rule will not hold good, that no bird is common to both continents that does not inhabit during summer the high northern latitudes, and the *Ardea alba* and *A. egretta* are not winter birds, but on the contrary summer visitants of Europe and the United States, and do not even then range far to the North: the European moreover is chiefly found in the east, and hardly ever seen in the west of that continent. This alone ought to have led us to detect the discrepancy. In order to clear up this point

before taking up the species which more immediately forms our subject, I think it proper to fix all the species of Egrets of which I have a perfect knowledge. These are :—

1. *Ardea alba*, L. (*Ardea Egretta*, Temm. *Ardea candida*, Briss.) which can easily be distinguished by its large stature, combined with a small crest, (which is wholly wanting in the American,) a much longer bill and longer tarsi, and the fusco-corneous colour of the legs. It is well figured by Naumann, Vog. Nachtr. tab. 46, f. 91, and the young by Roux, Ornithologie Provençale, pl. 314 (under the name of *Egretta*). It inhabits Europe, especially the Oriental parts, and is very common in the Caspian sea, in Asiatic Turkey, &c.

2. The second species is *Ardea Egretta*, Gmel. Lath. (*Ardea leuce*, Temm.) the one figured by Wilson, whose tall stature allows it to be confounded with the preceding, from which, however, it may be readily distinguished by its perfectly smooth head, its light orange and shorter bill, and black legs. It is found both in North and South America, being mentioned by d'Azara, and we have ourselves received it from Surinam.

3. The third is *Ardea flavirostris*, Temm. not yet figured. A smaller bird, with black legs also, at once known from its two above-mentioned close analogues; from the European by its yellow bill, from the American by its small crest. It is found in Southern Africa and the Australian Islands.

4. The fourth Egret in point of stature is the one we are treating of, well distinguished by its bill, which is flesh-colour at base, besides the different texture of the ornamental feathers.

As a fifth species we shall cite the *Ardea candidissima* of Wilson, which is the analogue of the *Ardea Garzetta* of Europe, figured by Roux, Orn. Prov. pl. 315. Both these are alike in stature and dimensions, and differ only, as is well known, by the crest, which in the latter consists of but two or three elongated, narrow, sub-

late feathers; while in the American the crest is formed of numerous elongated pendulous feathers, with loose flowing barbs.

Specimens that we have received from Java under the name of *Ardea nigripes*, Temm. we consider as the young of *A. Garzetta*, and are confirmed in this opinion by the fact of young birds that we possess of the American *candidissima* that stand precisely in the same relation to this species that the supposed *nigripes* does to the *Garzetta*.*

The family of the *Herodii*, *Cultriostres*, or *Ardeidæ*, especially when the group *Gruinæ* is withdrawn, and restricting it to our former *Ardeinæ*, is a highly natural one. It still comprises, it is true, many aberrant genera, birds of peculiar forms, and remarkable for their strange and oddly shaped bills, though still not so far different as to rank them more properly with any other class; and in their general structure, as well as their habits and dispositions too much identified with these to justify their separation into an independent family. But the *Gruinæ*, of which the Crane is the type, bear a strong analogy, and even in many respects so much affinity to the Gallinaceous birds, having shorter feet, vegetable food, and even their habits being terrestrial, that we think proper to unite them as a subdivision or subfamily with the *Alectrides*. The artificial character (which, as we are not now treating of them, is all that need be mentioned,) by which they may be at once distinguished from the *Ardeidæ*, consists in having the hind toe short, and inserted so high up as to be raised from the ground except merely at the tip; while in the *Ardeidæ* it is long and bears with its whole length on the ground, or nearly so. But as, according to the axiom of the great Linné, the character does not constitute the genus, even if the most general and

* I have lately been informed of the discovery of two new European species of Egrets, one from Sardinia, the other from Moldavia, of which the names and characters are not yet given.

characteristic mark should fail us, it is still no reason why the group is not natural which it has hitherto been believed to represent. A minute peculiarity may furnish a most useful though artificial generic or specific character, while an apparently important and evidently natural one may be of no use for this purpose. In our system the family *Ardeidæ* is composed of nine genera, of which none is subdivided except *Ardea* itself, which with *Ciconia* are all that are strictly typical. Besides the more direct relations, this family is connected with the *Rallidæ* by the curious though anomalous Courlan, also allied to the *Gruinæ* by its feet, as well as to the *Scolopacidæ*. But to these the genus *Eurypyga* forms a very strongly marked and still better passage. At the same time the *Platalea*, which in its feet shows the transition to *Phœnicopteridæ*, and by its curiously flattened bill stands alone, is so similar in internal conformation, and especially the sternal apparatus to the genus *Ibis* that they ought in this respect to go together; though *Tantalus*, one of the *Ibidæ*, is constructed rather upon the osseous plan of the *Ardeidæ*! *Scopus*, *Anastomus*, *Canchroma*, and even *Dromas* to a minor extent, each and all exhibit striking anomalies in their bills, so that *Ardea* and *Ciconia* are the only two typical genera with sharp-pointed bills of the whole group. In order to comprehend all these forms of bills, it becomes necessary to restrict greatly the physical characters of the family, and we can merely observe that in the *Ardeidæ* the bill, whatever be its form, is longer than the head, very robust, and almost always sharp, with cutting edges. The neck is long. The feet long, and always four-toed, the hind toe strong and well developed: the tarsus is longer than the middle toe, and toes and nails both are also long. The wings are of moderate length, and obtuse. The tail is never long, nor otherwise remarkable, and consists of twelve, or only of ten feathers.

There is no marked external difference between the sexes, but

the young vary greatly from the adults, and do not gain their complete plumage till their third year.

In habits and internal conformation these birds are all much more alike than in external. They have all a grave, deliberate, and well poised gait: their flight is slow, though light and elevated, and they stretch back their legs like sticks in flying, even more so than other Waders. They are faithfully monogamous in their loves: their nests are built with more art than those of aquatic birds generally, being placed in trees, thickets, aquatic grasses, and some of the species, half domesticated, even nestle on housetops: the female incubates, while the male merely watches, and supplies her with food. Both unite in nursing and rearing their young, which remain in the nest until they are full-fledged. The flesh of these Waders is quite unpalatable.

The genus *Ardea*, when disembarrassed of the several species forced into it by ancient authors, is a very natural one, differing from the Storks by having the inner toe cleft, whilst they have all the toes semipalmated at base: the Storks also have the tarsi reticulated, and the middle toe-nail entire, whilst the Herons have the former scutellated and the latter toothed like a saw, to assist in seizing and securing their slippery prey. A peculiarity of the Herons, in which they not only differ from the Storks, but from all other birds, is found in their anatomy: they have but one cæcum, like quadrupeds, while other birds have two. The genus *Ardea* is admitted by all authors, though some modern writers have cut it up into several, which we employ as subgenera, or groups of still minor importance. Generally divided into three, and by Boie into five, they might with the same propriety be carried to seven or eight; we recognise no more than three, comprising eight secondary groups. The first, which we call more properly Heron, (*Ardea*,) is well distinguished by its long and slender neck, all well clothed with

shortish appressed feathers ; and by having a very large part of the tibia naked.

The second, called Bittern, (*Botaurus*,) has the neck shortish, with loose, longish feathers, and the posterior more or less distichous and lanuginous: the naked part of the tibia is much limited.

In all the Herons the bill is more or less longer than the head, cleft to beneath the eyes, straight, compressed, conic-elongate, acuminate and very acute, higher than wide, and more or less robust. Both mandibles are near their base covered with a kind of very thin cere or membrane: the upper is scarcely longer than the lower mandible, and equal in height: it is longitudinally impressed on the sides with a straight furrow obliterated before: the upper ridge is therefore rather distinct and flat at base, terminated by the frontal feathers transversely placed; towards the point the ridge is perfectly smooth, compressed, and slightly and gradually inclined at tip: the edges, nearly vertical, in some species are perfectly entire, in others obliquely and finely denticulated, in all emarginated at the extreme tip: the palate has in the middle a longitudinal sword-like process, perfectly straight, which towards the throat is more or less conspicuously doubled: the lower mandible has strong and flattened sides, more or less impressed towards the base; it is sharply acute, with the edges drawn in, excessively sharp, quite straight, either entire or slightly serrated obliquely: the inferior ridge is slightly compressed, rather acute, and more or less ascending; the mental angle is extended beyond the middle of the mandible, is exceedingly narrow, very acute, and feathered: the lora are naked, as well as a portion of the orbits. The nostrils, not quite basal, are placed in the furrow, and are linear, longitudinal, pervious, and above half closed by a naked membrane. The tongue is half the length of the bill, acute, very entire, narrow, membranous, and rather flattened. The body is much compressed. The feet are equili-

brate, long and four-toed: the tarsus is always longer than the middle toe, sometimes barely so, sometimes a great deal: in some species the tibia is almost entirely naked, whilst in others it is on the contrary nearly all feathered: the toes are elongated, slender, narrowly bordered by a membrane, all unequal; the middle is connected to the outer one by a membrane that extends to the end of the first joint; the inner toe, a little shorter than the outer, is merely furnished with a very minute basal membrane: the hind toe is long, half equal to the middle one, and all bearing on the ground, being inserted opposite to the inner toe: the nails are compressed, falcate, the hind one largest: the middle one is dilated on the inside into a pectinated sharp edge. The coverings of the tarsi are transversely clypeate, the upper and lower clypei being scutelliform, the opistotarsus and knee are covered with small hexagonal scales; the toes are scutellated. These various forms of the scales are represented with inimitable accuracy by Mr. Lawson in the plate of Peale's Egret. The wings are broad, obtuse, tuberculated, the three outer primaries being longest, and the third hardly shorter than the two first. The tail is short and obtuse, and composed of ten or twelve feathers. The feathers of the lower neck before in the adult bird are pendulous, elongated, mostly acuminate, narrow, or ragged: on the occiput and back they are in many species elongated, sericeous, either linear, or lacinate-lacerated, seldom dense, oblong or rounded at the end; the neck is bare at base on the sides, but concealed by a tuft of longish plumes originating at the shoulders: the neck-feathers in some species are short and closely pressed to the body; in others they are softer, longer, especially on the sides, and woolly at base: the tail-feathers are always rounded at the end; those of the lower parts of the body are longish with the webs disjoined, and the barbs plumulose at base: the down is silky.

The females are like the males: the young are different from

the adults, only obtaining their full plumage after the third year. They moult annually. The adults are ornamented by long slender feathers, which they lose in moulting, and do not acquire again for some time, when they resemble the young.

These birds are remarkably dull: they inhabit marshes, or watch perched on trees near the water for their prey, which the conformation of their feet enables them to do with ease. They feed exclusively on animals, especially fishes and reptiles, but likewise large insects, and even small mammalia. They often stand motionless on the margins of ponds or marshes, concealed by the tall grass and weeds, with the neck so bent as to rest the head on the back, waiting patiently for their prey to pass within their reach, when they dart forward their sharp bill with inevitable aim: but when tired of this, which is often unsuccessful, they overcome their natural indolence so far as to move slowly through the mud or water, stirring up as they walk by means of their long toes the frogs or fishes that may be lurking in such places. Timid and cowardly to a great degree, the smallest Hawk will turn their flight and often master them, though capable of inflicting a dangerous blow with their powerful beak. They build in companies in high trees, laying about four eggs. The parents are, to a proverb, tender of their offspring, and carefully provide for them during the long time that they require their assistance. Their voice is loud, hoarse, and monotonous, and heard chiefly at night, when most of them are in motion. Their flight is full of grace, and is performed with the neck bent backwards, and the head resting against the back.

The numerous species of this genus are dispersed over all climates and countries, excepting the very coldest. In no group does the size vary to the same extent, as is exemplified in the American species by the gigantic *Ardea herodias* and diminutive *Ardea exilis*.

The Herons properly so called, forming our subgenus *Ardea*, of which the group *Egretta* is a subdivision, have the bill much longer than the head, at base as broad, or even broader than high, and quite straight. Their neck is very long, slender, and ornamented beneath with slender, elongated, pendent plumes: their flanks are thin, their legs very long, and have an extensive naked space above the heel.

They are more diurnal than nocturnal in their habits, are the tallest of the genus, and for the most part feed on fishes. There is scarcely a fish, however large, that a Heron will not strike at and wound, even if unable to carry it off. They both seize them in shallow water by darting their bill, or in deep water by plunging it under as they pass on the wing: they are therefore extremely injurious to fish-ponds, which they devastate to an incredible extent, and consume so great a quantity that a single Heron will destroy in a year several thousand large fishes, without taking into account the small fry which are their chief dependence. Even when gorged with prey, these greedy birds will sit meditating further mischief, with their long necks sunk between their shoulders, and their heads turned to one side, intently eyeing the pool; and their extraordinary power of digestion soon enables them to recommence their task. But like other lean and hungry gluttons, the Heron is never satisfied, his food avails him not, and he is generally an emaciated mass of skin and bones. They do not hide themselves in grassy places, nor attempt to escape danger by retreating to them, but on the contrary are careful to seek their prey where the weeds are not too high to prevent them from observing the approach of an enemy, to escape whom flight is their only resource. Highly social in their disposition, they travel, fish, and keep together in parties, and build on trees or hanging cliffs, hundreds in company, in retired haunts, where they may expect to enjoy perfect quiet and security. Several of

these retreats are celebrated both in America and Europe. The naturalist whose courage and perseverance enable him to penetrate the swamps, and a thousand difficulties that surround one of these recesses, and render them nearly inaccessible, is amply repaid by the astonishing spectacle he witnesses. He finds every branch, every fork, the top of every bush covered with the nests of these birds; and the ear is stunned with the cries and flapping of the wings of the alarmed multitude. The parents, and such of the young as can fly, at once depart, their numbers obscuring the sky: but their attachment for their offspring overcoming their fears, the parents soon return to their defence, and boldly attack any enemy, so that even the blows of sticks, or the report of the fatal gun has no terror for them. Their nests are made with sticks, and lined with wool; but if they find a nest already made, they do not take the pains to build a new one. Their young are as voracious and hard to satisfy as themselves.

The Egret Herons are entirely of a snowy whiteness, without any coloured markings on the plumage whatever. We even exclude from them the *Ardea russata* that visits occasionally the south of Europe, and possesses when adult in the greatest degree the long flowing ornamental plumes. This, with the *ralloides*, *speciosa* of Java, &c., we consider as forming a group equivalent in rank to Egret, and we apply to it Boie's name of *Buphus*.

Our second subgenus, *Botaurus*, including the Bittern, Night Herons, and other groups of authors, is characterized by the bill being hardly longer than the head, much compressed, higher than broad, with the upper mandible somewhat curved. Their legs are comparatively short, and the naked space on the tibia restricted: their neck is rather short, thickly and closely covered with long, broad, and loose erectile feathers, and merely downy above: their body is comparatively plump, even fleshy, and sometimes good eating. They are chiefly nocturnal, and haunt

in marshy and sedgy places. Their food is principally reptiles, insects, worms, fish-spawn, and they even eat vegetables, and are not by any means so destructive as the Herons proper, nor so skilful at fishing. The birds of this subgenus never sit in open places, but on the contrary keep concealed amongst the highest reeds or grasses, and if an enemy approaches their retreat, they either squat on the ground, or escape between the reeds, and never resort to their slow, heavily raised flight, but in the last extremity. Instead of high trees, the Bitterns place their nest in a sedgy margin, or among the rushes; and instead of sticks and wool, they are contented with simpler materials, such as sedge, leaves of water-plants or rushes; and they lay seven or eight eggs, twice the number of the true Herons. The young do not require for so long a period the parental care, but on the contrary follow the mother after a few days. When excited, the Bitterns have a curious mode of erecting their loose neck-feathers, causing it to appear very much enlarged. Although well defined as a group, these birds are connected with the true Herons by means of intermediate species that might with propriety be placed in either: as an example of the intermediate species more allied to the Herons, we might quote the beautiful *A. ralloides* of southern Europe, which we look upon as the type of the group *Buphus*. Of those nearer to *Botaurus*, *A. virescens* is an example, with the form of the Herons, but the plumage of the Bitterns: we establish it as the type of a natural though secondary group, to which we cannot do better than apply the name of *Herodias*, proposed by Boie. In the subgenus *Botaurus* also, nature has pointed out several small sections, of which nomenclators have eagerly availed themselves: as among the Herons we have noticed the Egrets, Herons proper, *Herodias*, and *Buphus*, we may also indicate the *Nycticoraces* among the Bitterns, which are distinguished by wearing in the adult state long, tapering occipital feathers;

and the *A. stellaris* of Europe, together with its close analogue, *A. minor* of Wilson, may be regarded as the types of a similar small group: another group hardly distinct had been called *Crabier* by the French, but without any fixed character: we have divided these *Crabiers* into two groups, and made them regular by arranging them near the limits of our two subgenera: the larger striated species of *Bitterns* have also been called *Onorés*, (*Tigrisoma*, Sw.)

A third subgenus, which we first instituted, and called *Ardeola*, contains only three species, the smallest of the tribe, and closely allied in form and even markings: one is the European *Ardea minuta*, the other the American *Ardea exilis*, and the third a still less, the New-Holland *Ardea pusilla*. In these the female differs somewhat from the male, and the young is different from both. The bill of these small Herons is much the same as that of the true Heron, being longer than the head, higher than broad at base, and with the upper mandible nearly straight: the neck likewise is elongated and rather slender; but, as in the Bitterns, it is merely downy above, and thickly covered on the remaining parts with long, loose, and broad erectile feathers: the body is slender, and exceedingly compressed, like that of the Rails, of which they remind one: the legs are comparatively short, but what strikes most, as a circumstance extraordinary in the Waders, their tibiae are completely feathered, as in the Woodcock and the land birds: the membrane that unites the toes is moreover simply rudimental.

These birds, which are chiefly nocturnal, have much of the habits of the Rails. They live and propagate in marshy grounds, hiding closely amongst the reeds, and running far and very fast in them rather than take wing. They feed on small fishes, reptiles, spawn, but more especially on water insects.

Returning to our Egret, whose claims to be considered new

have been set forth in the first page of this article, we have to state that it is dedicated to Mr. Titian Peale, by whom it was first shot for us in Florida, as a just compliment to a naturalist to whom American Zoology owes so much, and from whom so much may still be expected, retaining as he does all that zeal for science for which his family has been long conspicuous.

We regret not being able to relate any peculiarity in the habits of this bird, which besides Florida, inhabits other analogous climates of America. It is never seen in the middle states, but appears not to be rare in Florida, for since the individual first brought by Mr. Peale, we have observed it in almost all the collections of birds sent from that country.

Peale's Egret Heron is twenty-six inches long: the bill five inches, flesh-colour for nearly three inches from the base, then black to the point; the lora and naked parts of the face are of the same flesh-colour, but more delicate: the plumage is uniformly and without exception snowy white, as in all the Egrets: the head nearly from the origin of the bill down to the neck, is thickly and densely set with a large crest, formed of numerous, compact, subulate feathers, more than three inches long; a bunch of these feathers, precisely of the same texture, and even longer, hangs down from the front part of the neck. The structure of these feathers most resembles that of the corresponding plumes of the *A. Garzetta*, and is totally different from those of the *candidissima*. The long flowing plumes of the back are filiform, or criniform, rather than silky, being by no means delicate, and reach much beyond the tail, with their rays quite straight and rather stiff, and by no means curled, nodding, or divaricate, as in the *candidissima*. The wings are thirteen inches long: the tail is four. The legs, including the toes and nails, are all black, the toes yellow beneath: the nakedness of the tibia extends more than three inches: the tarsus is full six inches long, that is, twice as

long as the middle toe and nail: the hind toe without the nail measures more than an inch.

The young is distinguished by smaller proportions, a circumstance for which this group is more than usually remarkable, and by the absence of the ornamental feathers: we have, however, always observed, even in very young specimens, the tendency of the head-feathers to be long and pointed to a considerable extent, indicating the future crest.

SCOLOPACEOUS COURLAN.

ARAMUS SCOLOPACEUS.

Plate XXVI. Fig. 2.

Ardea scolopacea, GMEL. *Syst. Nat.* I, p. 647, sp. 87. LATH. *Ind. Orn.* II, p. 701, sp. 89, a very bad description.

Aramus scolopaceus, VIEILL. *Nouv. Dict.* VIII, p. 300. Id. *Gal. Ois.* II, p. 134, pl. 252. NOB. *Ann. Lyc. New York*, II, p. 155. Id. *Specch. comp. sp. Philad.* Id. *Cat. and Syn. birds U. S.* sp. 237.

Aramus Carau, VIEILL. *Nouv. Dict.* VIII, p. 301.

Rallus Guarauna, ILL. (*mentio duntaxat.*)

Rallus gigas, LICHT. *Berlin. Vög. Verz.* p. 79, sp. 815.

Rallus ardeoides, SPIX, *Av. Brasil.* II, pl. 91.

Rallus giganteus, NOB. *Add. Orn. U. S. in Journal Ac. Nat. Sc. Philad.* V, p. 31.

Nothorodius Guarauna, WAGLER, *Syst. Avium*, I, sp. 1. GOLDFUSS, *Nat. Atlas, Aves*, pl. 239.

Courliri Courlan, VIEILL. *loc. cit.*

Guarauna, MARCGR. *Brasil*, p. 204.

Courlan ou Courliri, BUFF. *Ois.* VII, p. 442. Id. *ed. 1783*, VIII, p. 266. Id. pl. enl. 848.

Carau, d'AZARA, *Voy.* IV, p. 223, sp. 366, an excellent description.

Scolopaceous Heron, LATH. *Syn.* V, p. 102, sp. 79. Id. *Gen. Hist.* VIII, p. 135. sp. 116.

My collection.

HERE is a bird, which, if any, might be considered as partaking of a double nature, some authors having regarded it as a Heron allied to the Rails, and others as a Rail somewhat analogous to the Herons. But notwithstanding these more striking affinities, and many besides that shall be carefully pointed out, for it is not contented with these, it fully deserves to constitute a genus by itself. After due consideration, therefore, we have withdrawn it

from the Rails, where, unconsciously coinciding in this with Spix, Illiger, and Lichtenstein, we at first arranged it; and finding the genus *Aramus* already proposed for it by Vieillot, willing as we are to admit it to this rank, we do not hesitate a moment to adopt his name, and although we must acknowledge ourselves equally unable with Dr. Wagler to explain the meaning or etymology of the word, we do not think this any reason why we should, with the German ornithologist, apply to this bird a new compound signifying *Spurious Heron*.

It was supposed that South America might furnish us with a second species of Courlan, but it being now a well ascertained fact that the *Carau* of d'Azara is the same as the *Guarauna* of Marcgrave, the bird must stand alone in his genus unless new discoveries shall supply him with a companion. This being settled, we shall proceed to give a minute description, that will therefore comprehend both its generic and specific characters.

Although there can be no doubt that our bird is the *Guarauna* of Marcgrave, it would be committing a great error to take it for the *Scolopax*, (or *Numenius*) *Guarauna* of systematical writers, that being a very different bird, a species of genuine *Ibis*, which they ought to place under their *Tantalus*, and which has nothing in common with our bird except a somewhat similar speckled appearance, the only source of all this confusion.

Instituting a genus for this bird does not however decide the question where it ought to be placed, for it may still be inquired, in what part of the system shall we arrange the genus. The reader cannot fail to be surprised that we, who made a species of Rail of the same bird, should place it, as a genus, in a very distant family. But this is the result of more mature reflection, and however apparently remote may appear to be at first sight the two families *Rallidæ* and *Ardeidæ*, we have already seen that the subgenus *Ardeola* claims some analogy with the former, and

the *Aramus* forms a still better and closer link. It was principally on account of the greatly compressed form of its body that we called it a Rail, and upon well examining the singular form of its bill, which is not observed in any other bird, every ornithologist will be satisfied of the propriety of the course we have finally adopted. We have no hesitation in placing it in the *Ardeidæ*, where it is eminently distinguished from all its fellow genera by its toes cleft to the base and entirely separated. Together with *Eurypyga*, it aberrates somewhat towards the *Scolopacidæ*, whilst by the manner of insertion of its hind toe, it tends a little towards the *Psophidæ*, subfamily *Gruinæ*, (Cuvier even going so far as to make it a genuine *Grus*,) and claims again a well-founded resemblance to the most typical form of the genus *Rallus*.

The Scolopaceous Courlan inhabits principally Cayenne, Brasil, and Paraguay, where it is rather common: it is numerous in the island of Cuba, and other warm parts of America. In the United States, Florida appears to be its most natural residence, and a few instances have occurred of its visiting the middle states. The Courlan leads a solitary life, or at most keeps in pairs; night and day they cry out in a loud, sonorous, and resounding voice, *Carau!* being in the full sense of the word a *Crying-bird*: its chief food is mollusca, and other aquatic animals, and even frogs; but not snakes nor fishes: when frightened they move their tail. Like all solitary and reserved characters, this bird is remarkably shy: it carefully hides itself, but as soon as aware of being discovered it starts rapidly to a great elevation, its flight being long continued: they walk also with great agility, but never willingly wade into the water: they alight on the very summit of trees: they build in the grass near stagnant water, concealing their nest with much art: they lay but two eggs: the young follow their parents soon after they are hatched; and are covered with blackish down, the throat only being whitish.

The specimen figured was a female, killed on the fifth of February by Mr. Titian Peale, at Key Tavernier, on the Florida reef. Mr. Peale took it for the much disputed Crying Bird of Bartram. Mr. Peale saw no other individual, but that we have described was brought by Mr. F. Cozzens from Florida: one or two killed on the coast of New Jersey near Long Branch may be seen in the American Museum at New York. Mr. Peale did not hear the bird utter any sound; it was very unwilling to fly, and caused him some trouble to make it rise from the thick mangroves and other bushes where it kept. It appears to inhabit the low shores and swamps of the rivers and lakes of Florida, and perhaps Georgia, being merely a straggler north of this. Even there we must conclude it to be rather a scarce species, as Mr. Peale could never get information about it, and even upon showing it to the most experienced sportsmen, they declared themselves unacquainted with it, except a few who called it Indian Hen, as they probably would any other rare bird of its size. It runs through the grass exactly in the manner of the Rails, compressing its narrow body to pass through a small hole, and very difficult to catch when wounded.

The Scolopaceous Courlan is two feet and three-fourths of an inch long, and three feet eight inches in extent. The bill, which has but a small gape, and by no means extending like that of the Herons to beneath the eyes, measures four and three-quarter inches in length: of course it is longer than the head, and may be called much lengthened; it is slender, quite straight, much compressed, being more than thrice higher than broad, and of a corneous consistence: the upper mandible is of equal height almost throughout, slender, from the base to the middle it is compressed, and channelled each side with a deep furrow covered by a kind of cere-like membrane; from where the furrow ends it swells slightly on each side, being there quite smooth, and even

appearing polished: there is no vestige of a notch, as in the Herons, and the margins are perfectly entire: these margins from the middle to the angle of the mouth are revolute inside and obtuse, towards the tip they are nearly vertical and acute, forming throughout inside a straight medial channel; the upper ridge is somewhat depressed at base, then slightly inclined to the tip, being obtuse, and no where sharp: the lower mandible at base and beyond the middle is of nearly equal height, straightish in the middle; on the sides at base it is covered by a very thin membrane, and slightly furrowed lengthwise; from the middle to the point it is as smooth and polished as the upper one, excessively compressed, with the ridge prominent, rather acute at tip, the margins are perpendicular, approximated, very entire; the bifurcation of the sides is very long, extending beyond the middle of the mandible; it is narrow, and the mental angle formed by it naked, acute, entering the corneous substance of the bill. The nostrils are placed rather distant from the base, and in the lateral furrow, they are entirely perforated, longitudinal, and somewhat elliptical: the tongue is elastic, narrow, and acute. The bill is yellow at base, and of a corneous blue-black at tip: the eyelids are yellow, the iris brown: the legs pale lead-colour, and the nails black.

The feet are elongated, and much of the tibia naked, the bare space measuring three inches: the tarsus, four and a half inches long, much exceeds the middle toe: the four toes are slender, all cleft from the base, long, unequal, and compressed; the inner is a little shorter than the outer, the middle longest, measuring three inches without the nail; the hind toe is rather more than one inch, and slender: it is inserted in an unusual manner, opposite to the base of the inner toe, but much higher, and with only the last joint, which is very short, resting on the ground. The unfeathered part of the tibia is covered behind with transverse

scutella, the anterior with large angulose scales; the tarsus behind has a double longitudinal series of knobs, before it is covered with oblique scutella; the cnemidia, that is, the lower part of the naked tibia, are squamulose; the toes scutulate, and warty beneath: the nails are moderate, arcuated, acute; the hind nail is rather the smallest: the middle is the largest, and dilates internally into a sharp edge, perfectly entire, and by no means pectinated, any opinions or statements to the contrary notwithstanding.

The body is compressed, but fleshy: the neck cylindrical and slender: the face and lora entirely feathered. When it is stated that some specimens have these parts bare, it is because the other *Guarauna*, which is an *Ibis*, has been confounded with it. The tail is moderate, scarcely six inches long, plane, broad, rounded, and composed of twelve broad feathers.

The wings are twelve and a half inches long, ample, and rounded-obtuse: the first quill is moderately long, and equal with the eighth, and by more than two inches shorter than the second, which is equal to the sixth: it is peculiarly shaped, narrower at base than at tip, where it is very blunt: the third is the longest of all, being however but little longer than the fourth.

The feathers of the neck are short, and rather narrow: those of the body and wing-coverts are rounded on their margins, and soft and dense, the inferior are somewhat loose on their borders. There is no naked place on the sides of the breast, as in the Herons. The general colour of the Courlan is a deep chocolate brown, or fuscous sooty hue, reigning all over the bird: the feathers are however paler on their margins, and there is on each from the base along the middle, including the shaft, with the exception of the tip, a large, broad lanceolate, pure white spot. (In the *Ibis Guarauna*, the white occupies the margin instead of the middle of the feathers.) This white spot is larger in

proportion to the size of the feather, so that it is more conspicuous on the wing-coverts, both upper and under, especially as on the back, not reaching to the tip, it is mostly concealed by the overlapping of the feathers: on the larger coverts, however, it consists of a mere streak, as well as on a few of the lower tail-coverts and femorals: generally speaking, however, these parts, as well as the rump, upper and lower tail-coverts, outer large wing-coverts, vent, all the quills, and tail-feathers are unspotted, and of a bright chocolate brown, with even a greenish gloss, darker, and with purplish reflections on the quills and tail: on the contrary, on the head and neck all round, the brown colour is paler and duller, and as the feathers are on these parts much smaller, the more extended white longitudinal spots are more closely set, producing a thickly striated appearance. On the crown and cheeks the white is moreover neither so pure nor well defined, which, together with the much less intense ground colour, gives these parts a rufous gray look: the throat is entirely whitish.

The sexes present no difference, and the Young soon put on the adult plumage.

ESQUIMAUX CURLEW.

NUMENIUS BOREALIS.

Plate XXVI. Fig. 3.

Numenius borealis, LATH. *Ind.* II, p. 712, sp. 9, (not of Ord, which is *N. hudsonicus*.)NOB. *Obs. Wils. Orn. notes.* ID. *Cat. and Syn. birds U. S.* sp. 244. ID. *Monogr.**Num.* in *Osserv. Cuv. Règn. An.* ID. *Sp. comp. Rom. Phil. sp. Phil.* 187.*Scolopax borealis*, FORST. *Phil. Trans.* LXII, p. 431, (not of Gmel. &c. which is *Numenius hudsonicus*.)*Numenius brevirostris*, LICHT. *Cat.* II, *Vog.* p. 75, sp. 774. TEMM. pl. col. 381.*Numenius cinereus*, *Sea-side lesser Curlew*, BARTR. *Trav.* p. 292.*Courlis demi-bec*, TEMM. *loc. cit.**Chorkito champêtre?* AZARA, IV, p. 275, sp. 307.*Esquimaux Curlew*, LATH. *Gen. Syn.* V, p. 125. LATH. *Gen. Hist.* IX, p. 180, sp. 10.FORSTER, *loc. cit.* not of Pennant, which is *N. hudsonicus*.*American Museum at New York.*

IN Wilson's standard work are described but two species of Curlew, and no more than this are given by Temminck in his very complete and excellent European Ornithology. We have brought forward three North American and three European species, which, contrary to the generally received opinion, are all distinct from each other, and different in both continents, not one being found in Europe that is also an inhabitant of America. These facts, independent of any reference to the almost interminable confusion pervading the works of preceding authors, will sufficiently justify us in repeating here and stating with more details what we have published in our Monography; in which, if no new species be introduced, (and the list is already too long,) we hope to have placed the old ones in a new and more advantageous light.

Perhaps no genus of birds has been less accurately studied, and notwithstanding that it is exceedingly natural, it has but very recently been restricted within its appropriate limits. The appellation it bears was first given by Brisson, yet he was far from assigning its true boundaries. In addition to the Curlews, he comprised in *Numenius* a few other birds, (the *Tantali* of Linné,) now forming the natural family of *Tantalidæ*, and divided into the genera *Tantalus* and *Ibis*. The true *Numenii* had been much more philosophically classed by Linné in his extensive genus *Scolopax*, which, though not well formed, was still, with very few exceptions, entirely composed of birds belonging to the natural family *Scolopacidæ*. Under all circumstances, the union of *Numenius* with *Scolopax* was far more natural than that with *Tantalidæ*; and although we make use of the name given by Brisson, the credit of establishing it in its present acceptation is due to Latham, or perhaps to Illiger, who freed it from extraneous species, and we, with Temminck, Vieillot, and others, adopt it as we find it. The species now regarded as *Numenii* form a very natural group, being closely allied in manners, colours, and somewhat even in size. Hence they have been continually mistaken for each other, erroneously united, or wantonly multiplied, as will be made amply apparent by the synonyms and scientific history of each species.

All the species of Curlews have the bill very long, slender, feeble, much arched, slightly compressed, almost cylindrical, hard and obtuse at tip, and entire: the upper mandible is longest, furrowed for three-fourths of its length, rounded towards the tip; the lower a little shorter. The nostrils are basal, lateral, longitudinal, linear, being placed in the furrow. The tongue is very short, small, and acute. The face is attenuated, and wholly feathered. The feet are rather elongated, slender, bare above the heel; the tarsi cylindrical, half longer than the middle toe,

with their integument reticulated: the three fore toes are short, fimbriated, scutellated beneath, *all connected at base by a short membrane* extending to the first articulation; the hind toe is inserted high upon the tarsus, slender, short, but longer than a phalanx of the fore toes, bearing on the ground only at tip; the claws are arcuate, rather short, bluntish; the cutting edge of the middle one being entire.

The wings are long, acute, falciform, with from twenty-eight to thirty stiff quills: the first primary is longest; the scapulars are elongated. The tail, rather short, is somewhat rounded, and of twelve feathers.

They moult once annually: the females perfectly resemble the males in colour, and the young only differ, but can be known at once, by their bill being much shorter and less bent.

Possessing numerous general features common to the Waders of their family, and a few of those which distinguish the *Ibis* and *Tantali*, the Curlews have nevertheless some peculiar traits of their own more easy to perceive than to define. Their physiognomy may be thus described. They have a rather small head, with a remarkably long, slender, and arched beak, longish neck, and body deeper than broad, and apparently gibbous. The wings are long, the tail moderate, the feet rather slender, though not so much so as in the allied genera, and bare for a considerable space above the heel (commonly, but improperly called the knee). The toes remarkably short and stout. The plumage of the Curlews is composed of a rather thick covering of somewhat loose, though silky feathers, abundantly furnished with down. The colours, consisting of a mixture of grayish brown, white, and blackish, are very dull, and hardly vary in the different species. The sexes are not distinguishable by difference of colour or stature; the female is perhaps a trifle smaller than the male. The young scarcely differ in plumage from the adults, but are

well marked by their much shorter and straighter bill. They moult but once during the year, and late in the season. We have detected a clue to the species in the medial line of the crown, the colour of the rump and of the under wing-coverts and long axillary feathers.

The Curlews are mute, timid, shy and wary. They frequent and seek their food in salt marshes, and along muddy coasts and inlets, where at low water they may be observed in company with other Waders on the mud flats, or at high water roaming along the marshes. They but seldom alight on wet sands, and only when muddy shores are not to be found; always preferring such on account of their flexible bill. They seldom desert the salt water, and are very rarely met with inland, at a distance from the sea or large rivers: during summer, however, they often frequent dry fields in search of berries. They run swiftly, being much upon the ground: their flight is high, very rapid, and long sustained. The voice of the Curlews is loud and whistling: when about to commence their great periodical journies they congregate in large flocks, rise to a great height, and extend themselves into a vast line: whilst thus travelling onward, they keep up an almost incessant whistling, carefully waiting for each other. These companies only separate during the breeding season. In captivity, though they may linger for weeks or months, they seem to perish at last from the continued operation of melancholy and want of proper food.

Their food is chiefly animal, and in a great degree marine. They prey indifferently upon worms, insects, mollusca, crustacea, and occasionally small fish, and are very dexterous in probing the mud with their long, soft and slender bill, and pulling out of their holes small shell-fish and crabs. In summer, however, they are very fond of berries, especially those of *Rubus trivialis* or Dewberries, and *Empetrum nigrum*, on which they soon fatten.

The spring is their season for breeding, and the northern regions the place they prefer for this purpose. They are monogamous, lay four or five pyriform eggs, which are deposited with little art on a few bits of reeds or grass placed in the midst of tufts, or in small bushes, for shelter; sometimes they are merely dropped in sand-holes, or on wild open shores. Both sexes sit on the eggs; but the young receive little attention from their parents, and almost as soon as hatched provide for themselves, without requiring their assistance.

This genus, though by no means numerous in species, is not confined to any particular regions of either continent; but is distributed every where along the shores from the frozen regions of the North to those of the South Pole, and they appear also in the torrid zone in winter. Their migrations may be traced from North to South according to the seasons. They pass the winter in our temperate regions, generally returning in May from the South, and in September from the North.

In the economy of nature, these birds seem to be of some importance in preventing the superabundant multiplication of numerous marine animals, thus assisting to maintain the equilibrium and preserve the harmony of the Animal Kingdom; as the Flycatching birds serve to check the too great increase of land insects. It is perhaps on this account that they are so generally diffused. In relation to man they appear to be of no less importance, since without being delicious, their flesh is very palatable, and even, when they have fed and fattened on berries, tender and excellent meat: when their nourishment has been derived from the sea it is much inferior. They are pursued both in Europe and America in various ways, and brought in numbers to the city markets. In some districts their eggs are much sought after, but those of other aquatic birds are mixed with them, and offered for sale under the same name.

Wherever the Curlews may be classed by ornithologists, their rank in the system of Nature is at the head of the family *Limicolæ*, which they connect with the *Falcati*. Their *linear* place, therefore, is between the genera *Ibis* of the latter, and *Tringa* of their own family: species of the latter genus are so closely related to them as almost to fluctuate between the two genera. There is a striking affinity on the one hand between some species of *Ibis* and *Numenius*, and on the other between the smaller *Numenii* and *Tringæ* with slightly curved bills, such as *Tringa subarquata*, and also those with semipalmated feet, but especially when they combine both these characters, as our new *Tringa himantopus*. In their own very natural family, the Curlews are more immediately related to *Tringa* and *Limosa*, both in aspect and manners. The genus *Scolopax* we do not consider as approaching them within several degrees.

Cuvier had attempted to divide this genus into two independent subgenera, but unsuccessfully, and they must be relinquished even as sections, inasmuch as the characters on which they are based have no existence in nature, as he has since virtually acknowledged by omitting all mention of the group *Phæopus* in his new edition of the *Règne Animal*. This is in fact one of those very natural small genera which do not admit even of well based sections. If the species were numerous, we might perhaps divide them into those with white rumps, and those which have no white on that part, or into those showing the crown of the head marked a central line, and those without this line. There being however but few species, we consider it to be more philosophical to view them as an undivided genus, beginning with the larger and ending with the smaller species: but at all events the marks we have indicated, (of the head and croupe,) together with those of the under wing-coverts and long axillary feathers, furnish us with what we have called the clue of the genus. For example, the

Numenius arquata of Europe is distinguished by its head, not parted by the central line, its large size, long arched bill, white rump, white under wing-coverts and axillary feathers: its American analogue, whose still longer bill has gained for it the name of *longirostris*, has the croupe of the same dark colour as the body, with the under wing-coverts, &c. rust-coloured. The *phæopus* of Europe, and *hudsonicus* of North America, similar in colour and stature, and each ornamented with the medial coronal line, are in like manner distinguishable, the former by the white, the other by the dark coloured croupe; and by the under coverts, in the European white banded with black, whilst in the American they are banded with black and rusty.

The two smallest, the present American species, and the *N. tenuirostris* of Europe, though less completely analogous, are nevertheless both destitute of the coronal line: the present has the rump dark, and the under wing-coverts banded with black and rusty; while the *slender-billed* has them pure white, as well as the rump, and ground of the tail-feathers. The diminutive size of the Esquimaux Curlew will certainly prevent its being confounded with the gigantic *N. longirostris*, especially as its bill is remarkably short, and but little arcuated.

The reader will here have already remarked, we are confident, the curious fact, that all the European species of *Numenius* have white rumps and white under wing-coverts; whilst the American all have the former uniform in colour with the remainder of the plumage, and the latter rust-coloured.

The true Esquimaux Curlew, (we say the *true*, for it is neither the Esquimaux Curlew of Wilson nor of the Arctic Zoology,) is one of the four species that are destitute of the medial coronal line. It is easily known from the large species by its diminutive size, from the small ones by wanting the white rump, from all by its very short bill.

It is but half the size of the species that has usurped its name of *Short-billed*, being hardly fourteen inches in length, and twenty-four in breadth. The bill is no more than two and a half inches long, but little arched, remarkably slender, blackish, the lower mandible rufous at base: the head is pale, with longitudinal lines of brown: the forehead is deep brown, with pale spots; although there is no medial line, it is somewhat indicated by yellowish marks on that part: the eyebrows and chin are whitish: the neck, breast, belly and vent are rufous-white, the two first dashed with brown streaks and arrowheads, and a few slender streaks on the vent: the feathered parts of the thighs are rufous-white, spotted with brown; the sides under the wings, rufous, transversely fasciated with brown: the back is of a deep brown, the feathers margined with yellowish-gray in a serrated manner, and the croupe is uniform with the rest. The wings are long, reaching much beyond the tail; they are brown; the shafts of the prime quills are white; the secondaries and lesser coverts margined with gray: the lower coverts, as well as the long axillary feathers, are ferruginous banded with brown: the rump is brown, the feathers edged and spotted with whitish. The tail is short, brown-ash crossed with darker bands, and slightly edged with whitish. The legs are bluish black; the tarsus is one and three-quarter inches long. The female is perfectly similar to the male, except a very little inferiority in size.

This exclusively American bird is widely spread throughout both sections of the new continent, being traced from the fens of Hudson's Bay in the extreme north, to the warm climates of Brasil, Monte Video, and Paraguay, a circumstance which, however recently observed, or extraordinary, is often repeated with the Waders that are peculiar to America. D'Azara informs us that in Paraguay this species makes its passage in the month of September, and keeps in the open champaigns, either wet or dry,

and never on the borders of rivers or marshes : hence he calls it field Curlew, *Chorlito champêtre*.

At Hudson's Bay this Curlew makes its appearance early in May, coming from the south, and going further north, returning again to Albany Fort in August : it remains there till September, when it departs for the south. It is common in Maine and Nova Scotia during the months of October and November, and still more so at Newfoundland. We have received it from Maine, and from Prairie du Chien in Michigan, and have occasionally met with it also in the markets of New York and Philadelphia : in the middle states, however, it is by no means common, having escaped the industrious Wilson. This fact proves that our Curlew is fond of extremely remote regions, without remaining for any length of time in the intervening countries between its winter and summer residences. They collect in small flocks of from ten to twenty ; and when starting on the wing utter a cry resembling *bibi* ; this whistling note may be heard at a distance. The Esquimaux Curlew lays four eggs, and keeps in flocks composed of young and old together : they feed much on the berries of *Empetrum nigrum*, which imparts to their flesh a delicate flavour.

It has been the lot of all the species of Curlews to be wantonly confounded with each other : only two were reckoned as European, and in them were merged as identical the three American. The *longirostris* was first definitively disunited from the *arquata* by Wilson. Vieillot unaccountably confounded as one two very different species, giving it more than one name, however. The *hudsonicus*, though correctly described by Latham, was referred by all writers, including Temminck, to the European Whimbrel, *N. phæopus*. The present one he forbore, through extreme caution, to unite also with it, observing that it might be a real species, or at least a constant variety. But when the bird actually fell into his hands, he called his specimens, which were from South Ame-

rica, *Numenius brevirostris*, not recognising in them the *N. borealis* of Latham.

Although we call this bird Esquimaux Curlew, it would perhaps be better to condemn this name altogether, and give this one the really appropriate name of Short-billed Curlew, although this as well as the former appellation has been misapplied. As for the legitimate scientific name, this also might be disputed. *Borealis* was first given by Gmelin to the Hudsonian Curlew, but as he called them *Scolopax*, we have preferred retaining the appellation of Latham, who is admirably correct with respect to the Curlews, being only wrong perhaps in the choice of the name, and certainly in the citation of Gmelin. As for Temminck, in declaring that the new species of Lichtenstein differs essentially from Latham's *N. borealis*, (a fact which was doubted by the accurate German himself,) he must have had in view our *N. hudsonicus*, Lath., the *Scolopax borealis* of Gmelin.

We can form no opinion on the *N. rufiventris* of Vigors, a supposed new Curlew from the North West Coast: the diagnosis is certainly inconclusive, not embracing the essential characters; and establishes no difference between it and *N. hudsonicus*, of which it also has the size.

The *N. madagascariensis* of Brisson forms a seventh species of *Numenius* peculiar to Southern Africa and Oceanica, allied to the *arquata* and *longirostris*: it is figured on the pl. enl. 198 of Buffon. We do not know either *N. virgatus*, or *N. lineatus* of Cuvier, but one of them at all events will have to be referred to the *madagascariensis*.

FLORIDA GALLINULE.

GALLINULA GALEATA.

Plate XXVII. Fig. 1.

Crex galeata, LICHTENSTEIN, *Verzeich. Mus. Berlin.* p. 81, sp. 826.*Gallinula chloropus*, NOB. *Cat. and Syn. birds U. S.* sp. 275.*Fulica major pulla, fronte cera coccinea oblongo-quadrata glabra obducta, membrana digitorum angustissima*, BROWNE, *Nat. Hist. of Jam.* p. 479, (*Red-faced Coote*).*The Coot*, SLOANE, *Jamaica*, II, p. 320, sp. 15.*My collection.*

IN all cases wherein we find two animals, however similar or apparently identical in other respects, but restricted within very far distant localities, between which no line of communication can be traced, and beyond which, as in the present case, they are not known to perform great periodical migrations, we may boldly assert that the individuals of the different countries belong to distinct species, having sprung from a different centre of creation, and not being descendants of the same original type. The few known exceptions to this excellent general rule are daily falling in with it, as they come under the closer observation of the more and more practised eye of the naturalist; and since the separation into different species of the Gallinules that inhabit the different parts of the globe, there is reason to think that no exception whatever will be admitted to exist, and that all that remain are owing to the want of sufficiently minute comparison and examination. No birds, in fact, reappear in widely separated longitudes under forms and colours so similar as the Gallinules, of which we are treating, and if all the species were found in the same country,



Florida Gallinule.
Gallinula galeata.

Yellow-breasted Rail.
Rallus neboracensis.

engraved by



they would hardly be looked upon even as individual varieties. Yet upon the principle we have set forth, and which we do not fear to maintain, they have a right, and ought properly to be considered, as real species. How different is the stand we now take, fortified by observations in the great field of nature, from that arbitrarily adopted by Buffon; who on the contrary saw every where the same species reproduced, but changed by climate, or I know not what, and whenever he could referred every new bird he met with to the paltry creations of Europe.

But to come to facts, and without longer indulging in theory, we shall merely state that the Florida Gallinule differs specifically from the common Gallinule of Europe no less than the Java Gallinule, (*Gallinula ardosiacae*, Vieill.) although the differences are almost imperceptible, so as to justify those who have not hitherto distinguished between them, among whom we are to be included ourselves. The true *Gallinula chloropus* is spread over all Europe and the temperate parts of Asia, and is also met with throughout the continent of Africa from east to west, and from north to south. We have examined specimens from Egypt, others from Senegambia, and from the Cape of Good Hope. The size varies much, even in specimens from the same country, but the *G. chloropus* and *ardosiaca* have always the toes shorter than our American analogue. In fact, even in the largest specimen examined by Lichtenstein, which was from Caffraria, and measured fourteen and a half inches, the middle toe without the nail was only twenty-six lines long: whilst in the Florida specimens of the ordinary size of fourteen inches, the same toe measures at least thirty-four lines. The tarsus likewise, and the other toes, are proportionally longer, and this forms the best discriminating mark. Another might also be drawn from the frontal clypeus, but as this extends with age in the different species, it may be deceptive: in full grown birds, however, it is proper to observe,

that both the American and Javan species differ from the common kind in having it much wider, and differently shaped: in the American it extends still further back, and is cut somewhat square behind, whilst the Javan has it exactly rounded: in the European it is much less extended, narrow, and comparatively acute. In point of form, markings, proportions of the primaries, and every other particular we could think of, we have been unable to find any distinction, however trifling, between the three species.

The genus Gallinule, restrained within its just limits,* is a small group composed of but five or six species spread over all the warm and temperate climates of the globe, and exceedingly similar in form and colours: only one, that figured by Wilson, assumes the brilliant vesture of its near relations the *Porphyrio*es, for which reason some authors have considered it as one of them. Together with the Rails, the Coots, and some others it forms the natural family *Macroductyli*, (*Rallidæ*), and is more aquatic in its habits than many web-footed birds. Unlike the Coots, however, the Gallinules dislike salt or brackish water, and confine themselves to fresh, and to rivers and streams especially, and they are solitary, or at most the hen is seen with her family, like the Gallinaceous birds of that sex. Being chiefly nocturnal, the Gallinules hide carefully by day among reeds and other aquatic plants; and even in a state of captivity they are so remarkable for this habit, that some which I kept in a yard would take advantage of every hiding-place to escape the eye of man. It was only at the approach of night that they would willingly display on the water their graceful evolutions, swimming in circles, and often striking the water with their tails. From time to time

* The greater part of authors, and among them Latham and Temminck, improperly unite the Short-billed Rails with them.

they would rest awhile, placing their necks on the reeds or large leaves of aquatic plants.

Not gifted by nature with the long wings of other Waders, the Water Hens, being any thing but wanderers, obey both their conformation and natural disposition by not undertaking long periodical migrations, but are permanently resident in their native countries, merely removing from one station to another within certain provinces, and without roaming over the adjacent districts. They run with rapidity; fly badly; always in motion, and frequently carry their tail high, as represented in the plate, showing the white plumage of the vent, especially when running on the ground. They dive when frightened, but never after food. They feed on small fishes, insects, and some vegetables, picking them up as they swim. They seldom leave the pond or river where they get their food and exercise, and are peculiarly attached to such as are bordered with sedge and bushes; and standing waters, green with vegetation, furnish them with abundant provision of animalcula and pond-weeds. They lay twice or thrice in a season, building their nest upon low trees, stumps and bogs, with sticks and fibrous substances, rushes and weeds, or other coarse materials in great abundance, invariably placing it by the water side. The eggs are very long, of a greenish white, spotted with rufous, and very pointed at the small end. There are nine or ten in the first brood, the subsequent ones less and less numerous, and the mother never leaves the nest without carefully covering them with weeds. The chicks are no sooner hatched than they swim, with instinctive dexterity, pursuing their parent, and imitating all her motions. Thus are two or three broods reared in a season, which while under her care she regularly after their evening's sport leads back to the nest, where she uses every exertion to make them warm, dry, and comfortable: but when grown up and taught to provide for themselves, she turns them off.

The Florida Gallinule, or Water Hen, is fourteen inches long: the bill one and a quarter to the corner of the mouth, and one and an eighth to the posterior portion of the clypeus; it is red, as well as the clypeus, with the point greenish. This clypeus, or bare red membrane spreading over the forehead, is more than half an inch wide between the eyes, occupying a great portion of the head, and being posteriorly cut somewhat square or slightly cordate, the reverse of what is observed in the European, which is rather pointed at this place. The whole plumage from the very base is of a dark plumbeous hue, or sooty black, the head and neck being a shade darker, and the lower portion lighter and more tinged with bluish, so that they might be styled cinereous. The mantle, that is, the whole back with the wing-coverts, are highly tinged with olivaceous: the quills are blackish, and the tail deep black, much more than in the other allied species. The under tail-coverts are also deep black, with the lateral pure white: the white also lines the wings externally from all round the shoulder, almost, but not quite to the tip of the outer quill, which is white on half the outer part of its narrow web: a few white longitudinal spots may likewise be seen on the under wing-coverts, and very large and conspicuous ones along the flanks, and a few whitish streaks mixed with the plumbeous on the belly. The wings are nearly seven inches long, and the tail more than three. The feet are greenish, with a red ring like a garter surrounding the tibia: the bare space on this is nearly three-quarters, and the tarsus two inches and three-eighths: the middle toe without the nail is more than two and a half, and the nail itself three-quarters: the lateral toes measure more than two, and the hind, one and an eighth. The sexes are precisely alike.

The little that is known of the habits of this Gallinule does not allow us to doubt that it has all those of its close analogues. It is common in Florida and Jamaica on the streams and pools,

and extends over a great portion of the southern continent of America: in the middle and northern United States it appears to be quite accidental, for although a few well authenticated instances are known of its having been seen and shot, even as far as Albany in the state of New York, it has escaped the researches of Wilson, as well as my own. It is by no means, therefore, a common bird, and is not known as inhabiting arctic America, ranging much less to the north, even as a straggler, than its European analogue. Its voice is sonorous, resembling *Ka, Ka, Ka!*

The genus *Gallinula* has the bill shorter than the head, rather stout, much higher than broad, tapering, compressed, straight, convex at the point: both mandibles are furrowed, the upper covers the margins of the lower, is inclined at the point, and spreads at base into a naked membrane occupying the forehead. This conformation, found also in the *Fulicæ*, to which Linné united them, more judiciously than they have since been united with the Rails, in which the front is feathered, is in my opinion of considerable importance: the lower mandible is navicular: the tongue is moderate, compressed, entire. The legs have been described among the characters of the family, the anterior toes being in all extremely long, flattened beneath, and bordered by a narrow membrane, which circumstance alone distinguishes the Gallinules from the Coots, that have a broad membrane cut into festoons. The hind toe bears on the ground with several joints: the nails are compressed, subarched, and rather acute. The wings are convex, rounded, the first primary is shorter than the fifth, the second and third being longest. The tail is so short as hardly to appear from under the coverts. The females scarcely differ from the males, but the young are different from the adults. They moult annually.

The family *Macroductyli*, or *Rallidæ*, when restricted to the five genera of which we compose it, (one being *Fulica*, which nothing

but blind caprice could separate from them,) is surprisingly natural. The bill is short, or of moderate length in the long-billed Rails, hard, thick at the base, straight, compressed, entire, curved at the point, and sharp on the edges. The head is small, the neck well proportioned; the body slender and much compressed. The feet are moderate, rather robust, and without exception four-toed: the naked space on the tibia is rather limited; the tarsus not longer, generally shorter than the middle toe, and *scutellated*: the toes are three before and one behind, remarkably long, (the most obvious trait of the family,) slender, quite divided, and edged with a decurrent membrane: the hind toe is rather long, articulated almost on a level with the others, resting on the ground a good part of its length: the nails are slender, compressed, and acute. The wings rather short, wide, somewhat rounded, concave and tuberculated; the first primary is not much shorter than the second, the third or fourth being the longest. The tail is short, and of twelve feathers.

The female is smaller, but otherwise differs little from the other sex: the young often differ from the adults: even those that moult twice in a year do not change their colours in moulting.

All these birds have very similar habits: they are all solitary; all fond of concealment and the immediate neighbourhood of water: they move nimbly about on marsh plants, walking on the softest mud, and even floating weeds, their characteristic long toes serving admirably the purpose of a broad base. Their food is small animals, seeds and vegetables. They are monogamous, and breed several times in the year: they build their nests on, or close to the water, some being even afloat, and therefore liable to be carried away in floods. The number of eggs varies from five to sixteen, and they are rounded: both sexes alternately sit upon them. The young run about under the parental care, and provide for themselves as soon as hatched; they are remarkably brisk

and lively, being born with a thick down of a beautiful velvet black colour, whatever else it may finally become. Those that migrate travel by night: owing to their short rounded wings, composed of flaccid feathers, their flight is slow and limited, and by no means rapid, so that they only have recourse to it in the last extremity, when it is performed with the legs hanging down in a way peculiar to themselves, and not stretched out as in the other Waders, or drawn up to the belly as in the generality of birds. It is in running that they excel, and with their long compressed body they make their way so adroitly and swiftly amongst the grass or weeds, that their pursuers are left far behind. They also swim well, and even dive occasionally when there is necessity for it. Their flight is however rapid when elevated, and fairly started. Their voice is strong but hoarse. Their flesh is well-flavoured.

YELLOW-BREASTED RAIL.

RALLUS NOVEBORACENSIS.

Plate XXVII. Fig. 2.

Gallinula noveboracensis, LATH. *Ind.* II, p. 771, sp. 16.*Fulica noveboracensis*, GMEL. *Syst.* I, p. 701, sp. 15.*Rallus ruficollis*, VIEILL. *Gal. Ois.* II, p. 168, pl. 266. (A bad figure.)*Rallus noveboracensis*, NOB. *Cat. birds U. S.* *Id. Syn.* sp. 273. *Id. Sp. comp.* sp. Phil. 212.*Perdix hudsonica*? LATH. *Ind.* II, p. 655, sp. 41.*Le Râle varié à gorge rousse*, VIEILL. *Nouv. Dict.* XVIII, p. 556.*Yellow-breasted Gallinule*, LATH. *Syn.* III, p. 262, sp. 15. *Id. Gen. Hist.* IX, p. 412, sp. 30. *PENN. Arct. Zool.* II, sp. 410.*Hudsonian Quail*? LATH. *Ind. Orn. Suppl.* p. 224. *Id. Gen. Hist.* VIII, p. 330, sp. 72.*American Museum, at New York.*

The genus Rail, and that of the Gallinules, are so closely related, that many authors have either confounded them together, or by their various definitions and acceptations made them to interfere with each other. Thus, for Latham, Temminck, and others, the Short-billed Rails, among which ranks the present species, are Gallinules, although they want that obvious character upon which Linné founded his natural, though too much extended group *Fulica*, and which we also, with Vieillot and others, adopt as its best representative character, namely, the naked frontal clypeus. The genus Rail is therefore very comprehensive and numerous in species, which are spread over all the globe, and may with propriety be divided into two subgenera or groups, the first of which will contain the Long-billed species, under the more restricted name of *Rallus*, containing the true *Ralli* of all

authors, whilst the name *Crex*, or rather *Porzana*, or *Ortygometra*, may be consecrated to the Short-billed Rails, improperly ranked by authors with the Gallinules. I say rather *Porzana* or *Ortygometra*, because the name *Crex* might be reserved for a secondary group, instituted for the *Corn-crake* alone, (*Rallus crex*, L.) an European bird, whose *dry-land* habits, so different from those of its congeners, have, with apparent propriety, induced Bechstein and others to elevate it to the rank of a full genus. Its land habits are so peculiar, resembling more those of Gallinaceous birds than of Waders, that notwithstanding a perfect similarity of conformation, we do not hesitate to grant it the distinction of a section for itself, especially as we are at last, after a minute examination, able to assign it a character drawn from the respective proportions of the toes and tarsus. This is, however, the result of extraordinary pains. In the Land Crake of Europe, (and probably in a few analogous foreign species) the middle toe without the nail is shorter than the tarsus, whilst in the Water Crakes it is longer. The hind toe is also shorter and rather more elevated from the ground. All the other Rails and Crakes are, though much less aquatic than the Gallinules and Coots, always found in marshes, swamps, lakes, and their reedy margins, or in their vicinity, and they even swim occasionally, though not habitually. The *Ortygometræ*, or Crakes, are again subdivided by the modern English school into two groups, which they elevate to the dignity of genera, under the names of Crake and Craker, but to which they assign no character. At least Dr. Leach, the author of the genus *Zapornia*, did not, as far as I know, characterize the group, nor is my good friend at present able to point out the difference. However this may be, the only species referred to it is the European *Rallus pusillus*, whilst its close relative the *porzana*, and even the *R. baillonii* are left in *Ortygometra* with the *Rallus crex*, which with great inconsistency the

same writers omit to distinguish separately, as has been done by some Germans and Italians. It will not be useless here to bear in mind that even the two chief divisions of this natural genus pass so insensibly into each other as to make it impossible to separate the connecting species, so that a great many Brazilian Rails are arbitrarily placed in either subgenus, notwithstanding that the extremes—which among the four North American species may be exemplified by this, the Yellow-breasted namely, and the Virginia Rail—are so widely different: and this furnishes additional proof of the inexpediency of Latham's arrangement, however it may have since been admired and imitated. Our genus Rail, which we maintain to be natural, though closely related to *Gallinula*, and especially *Porphyrio*, is easily known at once from them all by the feathered front, common to all the species.

The bill, varying in length, which affords the means of distinguishing the two subgenera, is in all the Rails more or less thick at base, generally straight, and always compressed: the upper mandible is furrowed each side, somewhat vaulted and curved at tip, its base extending upwards between the feathers of the front: the nostrils, placed in the furrow, are medial, oblong or longitudinal, open and pervious beneath, and covered at base by a membrane (by which conformation they differ essentially from the *Porphyrios*): the tongue is moderate, narrow, compressed, entire, acute, fibrous at tip: the forehead is feathered: the body very compressed and thin flanked. The naked space on the tibia is small, the tarsi subequal to the middle toe, somewhat compressed, so as to make up for the want of membrane in the analogy to the Webfooted, that other less aquatic wading birds exhibit. We are particular in remarking this, for the toes are entirely divided, and the decurrent membrane extremely narrow. The hind toe equals in length one phalanx of the middle, and is inserted a

little higher than the others: the nails are short, compressed, curved, and acute. The first primary is shorter than the fifth; the second, third, and fourth being the longest. The tail is very short, the feathers flaccid, not appearing from beneath the coverts.

The female is generally, though not always, similar to the male, an exception being met with in one of the small European species. The young differ much from the adult. They moult twice a year.

The bill of the subgenus *Rallus* (true Rails,) may be thus described: longer than the head, slender, straight, subequal throughout, compressed at base, cylindrical and obtuse at the point; upper mandible furrowed beyond the base: nostrils more basal, linear.

In the Crakes, of which the present is an example, the bill is shorter than the head, robust, much higher than broad at base, tapering, compressed and acute at the point: upper mandible furrowed at base only, a little curved at tip: the lower is navicular: the nostrils exactly medial, oblong. Apparently the group is easy to define, but as if nature took delight in baffling our attempts at exactness, the species are found to pass from one form to another by nice and insensible degrees.

This Rail, like all others, inhabits swamps, marshes, and the reedy margins of ditches and lakes. By a singular coincidence, it was in the market of New York that, in the beginning of February, 1826, I first met with this pretty species, which appears to have escaped the industrious research of Wilson, although found equally in Pennsylvania in winter, where it is, however, very rare. We can hardly believe it is to be found in the south or south-west, notwithstanding we have been credibly informed of the circumstance. But we have no hesitation in declaring it an arctic bird, for we do not doubt that it is the Hudsonian Quail of Latham, thus miscalled by superficial observers on account of its

general resemblance in plumage and size to the true Quail of Europe; besides which we have received it ourselves from the extreme northern limits of the American continent, and have information of its inhabiting near the most north-western lakes, such as the Athabasca.

The Crakes, as well as the true Rails, lead a solitary life: they are timid and shy, screening themselves from observation amidst the tall reeds, so as hardly ever to be seen except when surprised, which does not very often happen, and forced for a moment to have recourse to their short wings. But they prefer to evade dangers by their rapid movements among the aquatic herbage, which the compressed form of their body enables them to execute with the greatest facility, however entangled the stalks, or narrow the interstices. They also swim and dive tolerably well, when compelled to take the water, hiding all but the tip of the bill, but are by no means so essentially aquatic as the Gallinules, or their close relatives the *Porphyrones*. They also breed in marshes, among weeds and thickets, placing the nest near the water's edge, or, fastening it to the reeds, they build a floating habitation. In most of the species, (how it is in the present we do not know,) the eggs are about eight, generally seven or nine in number, their colour being always of a green more or less tinged with olive, and very oval in shape. Different in this from the Gallinules, they prefer stagnant to clear waters, and always keep where the grass is high, and particularly avoid sand and exposed shores. Notwithstanding their apparently limited powers of flight, and a conformation similar to that of the sedentary and unenterprising Gallinules, they periodically undertake great journies. They walk with agility and ease, raising their head, elevating their feet, and jerking up their tail: they alight sometimes on low branches, never on trees, except to escape a very close chase. Of a nocturnal disposition, they hide closely by day, seeking their

food in the morning and evening, or by moonlight, when they emerge from their retreats. Their food is both animal and vegetable; they search eagerly after worms and snails, and are no less fond of certain leaves, and the seeds of marsh plants.

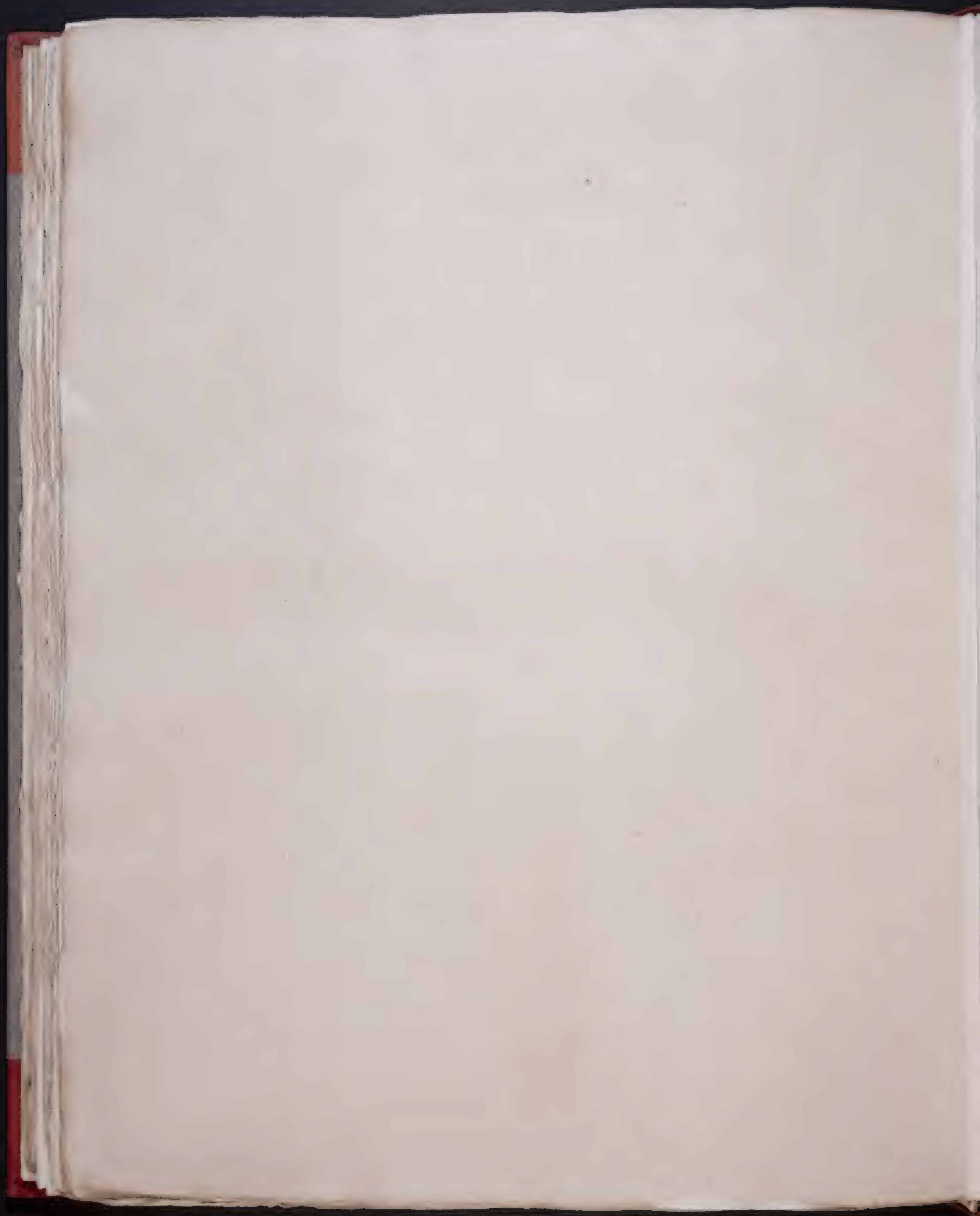
The following description is taken from a fine male, procured, as we have mentioned, in the neighbourhood of New York in the winter.

Length hardly six inches, extent about ten: bill six-eighths of an inch long, exceedingly compressed, of a greenish-dusky, at base beneath on the margins of both mandibles, and the ridge near the front, dull yellowish-orange; irides dark drab: feet dirty flesh-colour; tarsus one inch; middle toe an inch and one-eighth long. Base of the whole plumage slate. Head above chocolate-brown, the feathers being slightly skirted with cinnamon-ferruginous, and on the hind part minutely dotted at tip with white; over each eye a broad stripe of cinnamon-ferruginous, a chocolate spot between the bill and eye inconspicuously continued beyond it, the chocolate-brown colour descends from the nucha to the back on the upper part of the neck in a broad stripe, the feathers of which are widely skirted with cinnamon-ferruginous, and crossed by two narrow white bands, one of which is terminal; those nearer to the neck, and the feathers of the rump having only the terminal band; sides of the neck and whole under surface yellowish-ferruginous, each feather being tipped with darker ferruginous, which gives a waved appearance to those parts, the waves being more intense on the lateral parts: throat and belly whitish, but passing insensibly into the general colour; flanks and thighs darker, with the two white transverse lines, as on the back. Wings when closed reaching to the tip of the tail; upper wing-coverts dark slate broadly margined with olive-ferruginous, and each with two white narrow spots representing the usual lines; margin and spots becoming by degrees inconspicuous

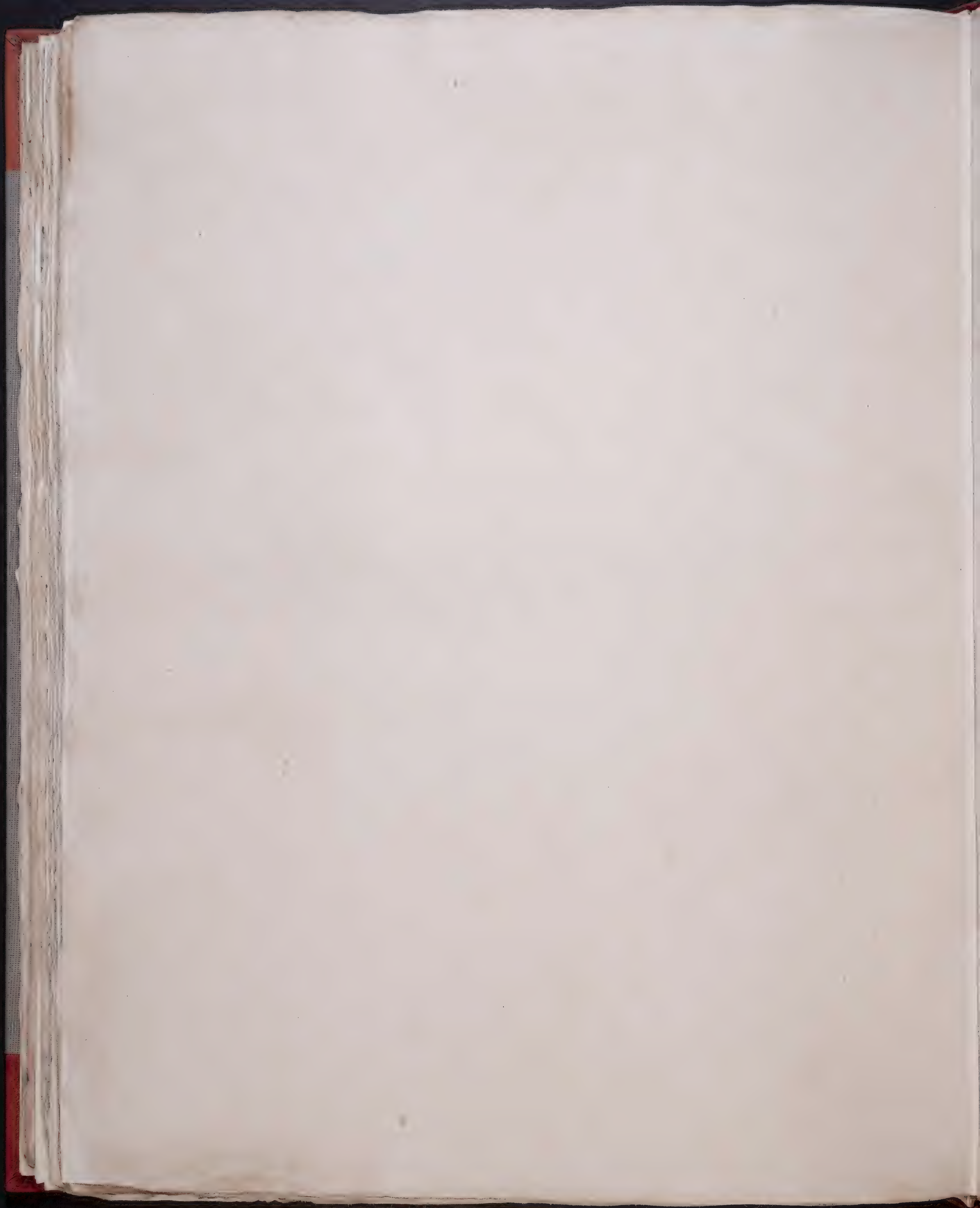
towards the outer coverts; inferior wing-coverts and axillary feathers white; quill-feathers plain grayish, considerably lighter beneath, and with the shafts above darker; last of the primaries and first of the secondaries with two or three white dots very irregularly disposed, five or six nearest to the body white on a great part at tip, the last becoming, however, more generally grayish, and only mottled with white; tertials, or rather scapulars, blackish, very widely bordered each side with different shades of yellowish-ferruginous, of which the palest is outside, and crossed by the two narrow white lines, having besides a rudiment of a third, equidistant; these scapulars form a whole with the wing-coverts and the feathers of the back, being of the same colour, only somewhat more brilliant. Tail very short, feathers blackish, each side ferruginous, with the two white lines, but interrupted, and neither at the tip; the tail is altogether concealed in its upper and lower coverts; the upper are of the same colour, but have only a terminal white band, whilst the inferior are black at base, and with a broad and vividly ferruginous tip.

This is the most brilliant specimen I have seen, and I must declare that it had all the appearance of being adult. Others did not, however, differ in anything except in having the colours duller and less decided: nor did I notice any difference between the sexes, except a little in size, the female being smaller. According to Vieillot, however, the plumage I have so minutely described could have been only that of the young bird: he states the adult male to be different in colour both from the adult female and the young, but as the differences appear to consist more in the language of his imperfect descriptions than in anything else, we shall bestow no further notice upon them.

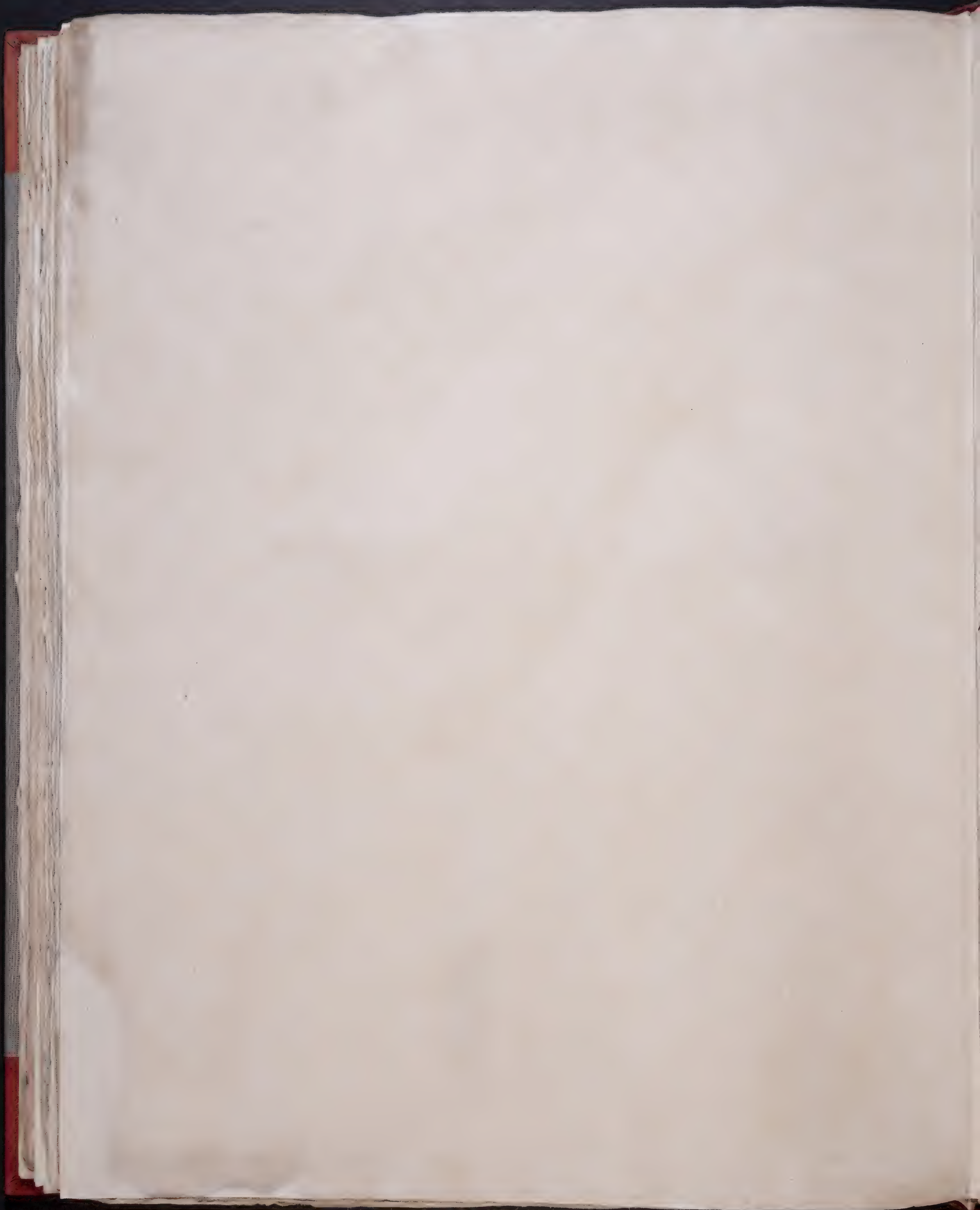
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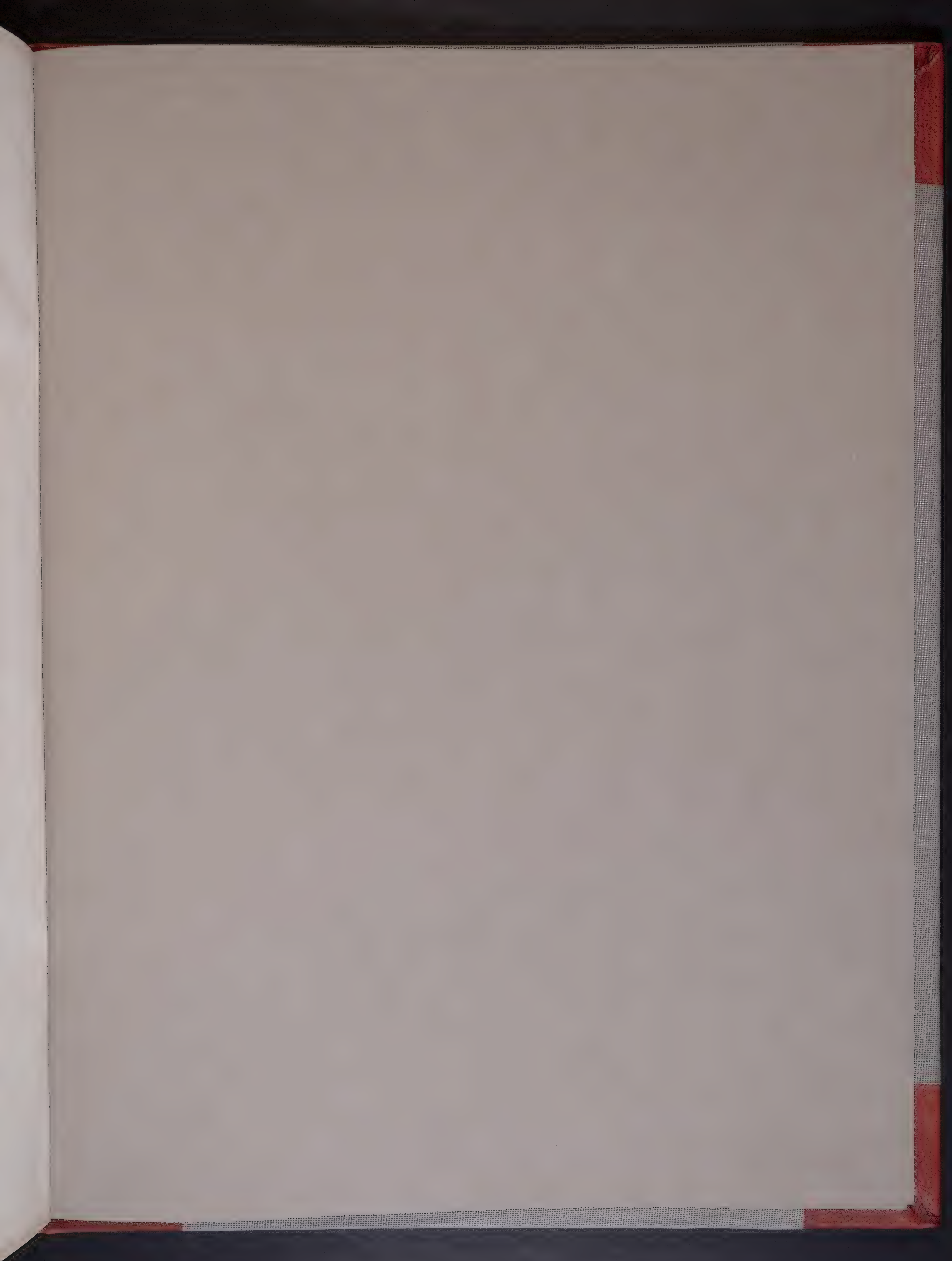




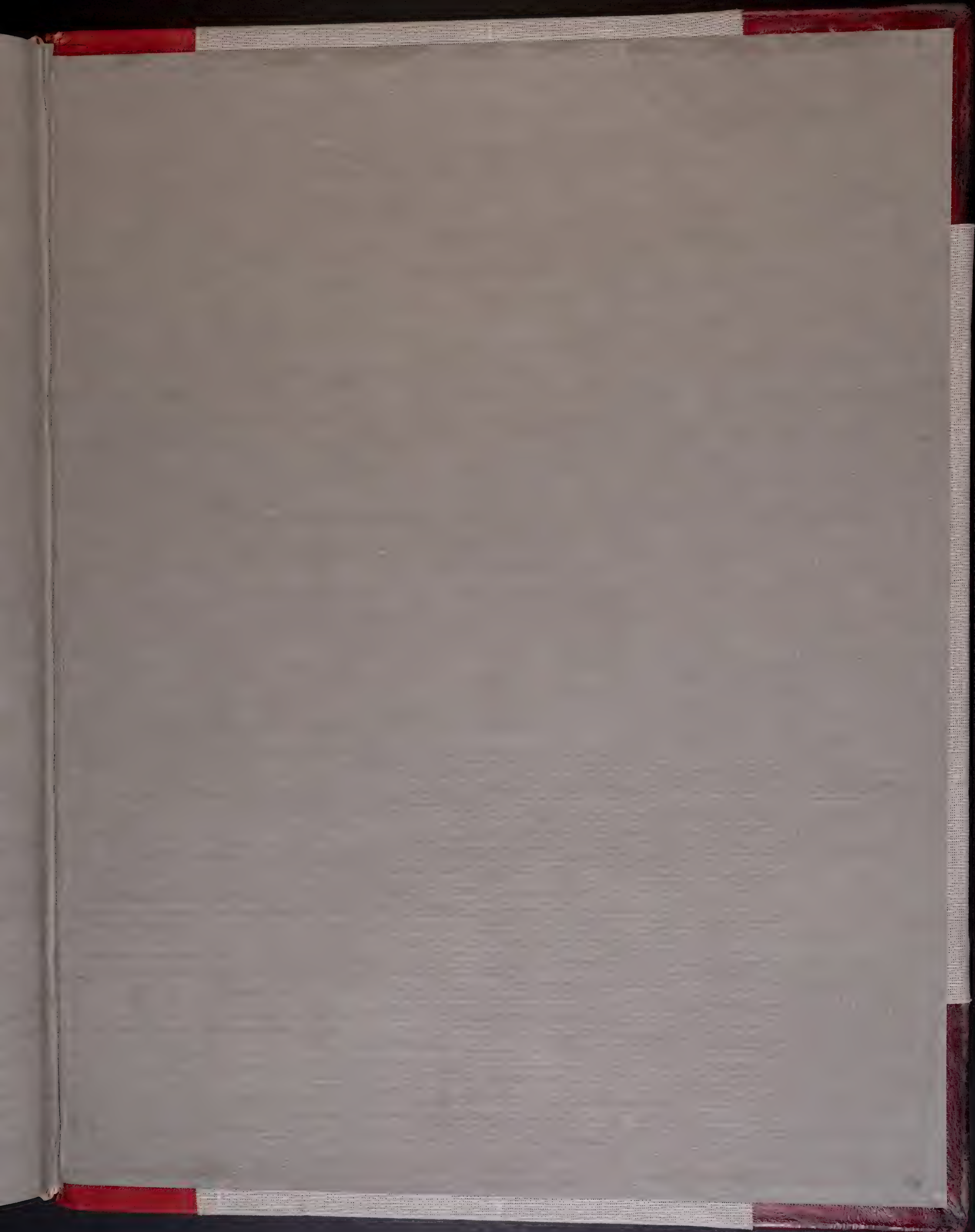




















AMERICAN
ORNITHOLOGY;

OR,

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OF

BIRDS INHABITING THE UNITED STATES,

NOT GIVEN BY WILSON.

WITH FIGURES DRAWN, ENGRAVED, AND COLOURED, FROM NATURE.

BY

CHARLES LUCIAN BONAPARTE.

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